List of redactions

The following table lists the basis for all redactions in the contract under section 32 of the *Government Information (Public Access) Act 2009*.

There is no intention to release any of the material redacted in this contract at a later date.

Page number(s) of redaction	Basis for redaction
62	Commercial-in-confidence
114	Commercial-in-confidence
115	Commercial-in-confidence
157-159	Commercial-in-confidence
234	Commercial-in-confidence
326-332	Commercial-in-confidence
1008	Commercial-in-confidence
1059-1063	Commercial-in-confidence
1134-1138	Commercial-in-confidence
1165	Commercial-in-confidence
1219-1224	Commercial-in-confidence
1259	Commercial-in-confidence
1272	Commercial-in-confidence
1440-1443	Commercial-in-confidence
1584	Commercial-in-confidence
1604-1622	Commercial-in-confidence
1627	Commercial-in-confidence
1640	Commercial-in-confidence
1837-1843	Commercial-in-confidence
1845-1847	Commercial-in-confidence
1991	Commercial-in-confidence

2103-2109	Commercial-in-confidence
2111-2113	Commercial-in-confidence

PROCURE IT FRAMEWORK

VERSION 3.1

PART 2: CUSTOMER CONTRACT

TABLE OF CONTENTS

1. Recitals

PROCURE IT FRAMEWORK

1.1 The New South Wales Department of Finance and Services administers the *Procure IT Framework*.

1.2 The NSW Procurement Board ('the Board') is established under section 164 of the Public Works and Procurement Act 1912 (NSW) ('PWP Act'). The Board may pursuant to section 174 (1) of the PWP Act ,establish a scheme under which a Government Agency accredited by the Board may procure goods and services for that agency or for other government agencies, subject to any terms and conditions of its accreditation.

1.3 The Contract Authority is the head of a Government Agency, which may procure goods and services for that agency or for other government agencies consistent with any applicable policies and directions of the Board, the terms of its accreditation (if any) by the Board, and the principles of probity and fairness.

1.4 The relevant Contract Authority is responsible for the administration of the Head Agreement on behalf of Eligible Customers and has authority to act on behalf of these entities in this respect.

1.5 The *Procure IT Framework* is designed so that Products and Services can be acquired:

(a) as a result of a panel arrangement where an entity acts as the Contract Authority and establishes a master purchasing arrangement where one or more Contractors agree to offer certain Products and/or Services to Eligible Customers at pre-agreed Prices and on pre agreed core terms and conditions, for a defined Term (**Panel Arrangement**); or

(b) using an alternate procurement process that does not involve a Panel Arrangement (**Non-Panel Arrangement**).

PANEL ARRANGEMENT

1.6 Where the *Procure IT Framework* is used for a Panel Arrangement, the Contract Authority will undertake a procurement process and the successful Contractors will sign the Head Agreement and go onto the panel. The Head Agreement requires that all Eligible Customers who acquire Products and Services under the Panel Arrangement acquire the Products and Services using the form of Customer Contract that is set out in the *Procure IT Framework*.

1.7 The Head Agreement describes the relationship between the Contract Authority and the Contractor for the administration of the Panel Arrangement, including the Products and Services that can be acquired under the Panel Arrangement, how those Products and Services can be updated during the Term, the Pricing for the Products and Services, which entities are entitled to acquire Products and Services under the Panel Arrangement, which Approved Agents can be used by the Contractor to supply the Products and Services, the Term of the Panel Arrangement, the minimum insurance requirements and any Performance Guarantee that might apply to Customer Contracts entered into under the Head Agreement, as well as the general terms and conditions applicable to the relationship. .

NON-PANEL ARRANGEMENT

1.8 Where there is no Panel Arrangement, a Customer may acquire Products or Services from the Contractor under a Customer Contract, and the terms and conditions of the Head Agreement are not to be used.

CUSTOMER CONTRACT

1.9 The Customer Contract describes the relationship between the Customer and the Contractor for the supply of the Products and Services that are described in the Customer Contract. Where the Customer Contract is made under a Head Agreement:

(a) the Products and Services that can be acquired, the Prices at which they can be sold, and the degree to which the terms and conditions can be varied are limited by the terms of the Head Agreement; and

(b) the Customer is entitled to the benefits of any arrangements that have been made by the Contract Authority under the Head Agreement in respect to insurance and any Performance Guarantee.

1.10 The Parties agree to perform their obligations in accordance with the terms and conditions of this Customer Contract.

DICTIONARY

1.11 The *Procure IT Framework* includes the Dictionary, which defines key terms and concepts.

2. Scope of Contract

PRODUCTS AND SERVICES

2.1 Where the Customer Contract is made under a Head Agreement, the Customer must acquire Products and/or Services, at the Prices, which must not exceed the amounts set out in Annexure 3 to the Head Agreement.

2.2 Where the Customer Contract is not made under a Head Agreement, the Customer must acquire the Products and/or Services stated in the Order Documents in accordance with the Customer Contract.

PRICING

2.3 The amounts set out in Annexure 3 to the Head Agreement are the maximum amounts payable by a Customer for the Products or Services acquired during the Term of the Head Agreement, subject to any increase made in accordance with any price variation mechanism stated in Annexure 3 to the Head Agreement. Nothing in this clause 2.3 prevents:

(a) the Contractor from charging a Customer for any item, service, expense or other thing which is permitted to be charged for under a Customer Contract; or

(b) the Contractor and the Customer agreeing Prices which will apply to a Customer Contract which are lower than the amounts stated in Annexure 3 to the Head Agreement.

CONTRACT PERIOD

2.4 The Customer Contract commences on the Commencement Date and will expire at the end of the Contract Period stated in Item 10 of the General Order Form. The Customer may extend the Contract Period on the same terms and conditions for the period stated in Item 10 in the General Order Form, by giving the Contractor written notice at least 30 days prior to the end of the Contract Period.

NOMINEE PURCHASER

2.5 If an Eligible Customer requires a Nominee Purchaser to enter into a Customer Contract on its behalf, the Contractor may not refuse to enter into that Customer Contract solely on the basis that the Customer Contract will be signed by the Nominee Purchaser as agent for the Eligible Customer and will not be signed by the Eligible Customer itself, provided that the Nominee Purchaser:

(a) provides its current registration number as given by the Contract Authority or Eligible Customer;

(b) provides its nominating Eligible Customer's Australian Business Number; and

(c) provides the Contractor with the written authorisation from the Contract Authority or Eligible Customer that confirms the Nominee Purchaser's rights to purchase Products and/or Services as agent for the Eligible Customer.

3. Formation of Customer Contract

FORMATION

3.1 A Customer Contract is entered into under a Head Agreement only where the Head Agreement is cross referenced in Item 7 of the General Order Form.

3.2 Where the Customer Contract is entered into,(and there is either a Head Agreement or the Customer is not the Contract Authority) the Contractor and the Customer:

(a) agree that the Contract Authority may enforce the Customer Contract as agent for the Customer, even though the Contract Authority is not a party to the Customer Contract in its own right and in such circumstances, the applicable limitations and exclusions of liability in respect of the relevant claim will be those set out in clause 18 below, rather than those set out in clause 12 of the Head Agreement; and

(b) may seek to include any Additional Conditions that vary any of the terms and conditions of the Customer Contract including the Protected Clauses, provided that the Customer first obtains the written approval of the Director General, NSW Department of Finance and Services and the Contractor has received a copy of such written approval.

3.3 A Customer Contract between the Contractor and Customer is created upon:

(a) the Parties completing and agreeing the Order Details and any Additional Conditions; and

(b) the Customer and the Contractor signing the General Order Form.

3.4 The Parties must, at a minimum, include in the Order Documents details of the Parties (stated in Item 1 and Item 4 of the General Order Form), Item 7 (if the Customer Contract is placed under a Head Agreement), the relevant Modules that are to be included in Item 8, the Contract Period in Item 10, the Products and Services (stated in Item 11 of the General Order Form or in the relevant Module Order Form), Price (or such details as are required to calculate the Price including those stated in Item 11 of the General Order Form or in the relevant Module Order Form), delivery details (including those stated in Item 12 of the General Order Form), the Contract Specifications (as stated in Item 13 of the General Order Form) and any details from the Module Order Forms that are required to describe the Products or Services.

3.5 The Parties may use a shortened version of the General Order Form (in hard or electronic format) which omits Items that the Parties agree are not required for the Customer Contract, provided that:

(a) the minimum Order Details stated in clause 3.4 are included in that form, as well as any other Order Details that the Parties may agree to include;

(b) the structure and form of the General Order Form is consistent with Schedule 1 (even if some Items are omitted. Where Items are omitted subsequent Items that are included must retain their current Item number or heading so that the references in the Procure IT Framework remain accurate);

(c) the document readily identifiable as a General Order Form that comprises part of this Customer Contract and:

(i) uses the heading:

"General Order Form. Schedule 1 to the Customer Contract (which is Part 2 of the *Procure IT Framework*)"

(ii) and includes the phrase;

"This General Order Form is part of the Customer Contract and incorporates all Parts, terms and conditions and other documents listed in clause 3.8 of Part 2 as if repeated in full in this General Order Form."

and

(d) the shortened document is signed by both Parties.

3.6 The Parties may use an electronic form of any Order Document, provided that an electronic form of the relevant Order Document is lawful.

3.7 To the extent that an Item in the Order Documents has not been completed or is omitted, that Item will be deemed not applicable.

3.8 The Customer Contract comprises:

(a) any Modules that are stated as forming part of the Customer Contract in Item 8 of the General Order Form and the corresponding Module Order Forms;

(b) any Schedules that are stated as forming part of the Customer Contract in Item 9 of the General Order Form other than Schedule 1 (General Order Form), Schedule 2 (Agreement Documents), Schedule 3 (Service Level Agreement) or Schedule 12 (PIPP);

(c) any Additional Conditions in Schedule 1 (if applicable);

(d) the other provisions of Schedule 1;

(e) these clauses 1 to 26;

(f) Part 3, the Dictionary;

(g) any PIPP agreed by the Parties based on Schedule 12 (PIPP);

(h) any Service Level Agreement agreed by the Parties based on Schedule 3 (Service Level Agreement);

(i) all other Order Documents;

(j) Annexure 3 to the Head Agreement (if applicable); and

(k) the Agreement Documents (if any).

3.9 To the extent that there is any conflict between any of the documents that comprise the Customer Contract, the conflict shall be resolved by giving priority to the documents in the order in which they appear in clause 3.8 (with an item higher in the list having priority over a lower item).

3.10 For clarity:

(a) the terms and conditions of use of NSWBuy or any other electronic purchasing system used by the Customer are not part of the Customer Contract;

(b) if the Customer uses any document that has any terms and conditions on it as the basis of a General Order Form (including a purchase order) then any terms and conditions that are on that document (whether pre-printed, automatically generated or otherwise) but are not in the form and structure of the General Order Form, are expressly excluded from the Customer Contract. Any Additional Conditions must be inserted as Item 43 (Additional Conditions) of a General Order Form.

COMPLIANCE WITH CONSUMER LAWS

3.11 To the extent that the provisions of the *Competition and Consumer Act* 2010 (Cth) (**CCA**) apply to goods or services supplied under this Customer Contract, then the provisions of this Customer Contract are subject to the provisions of the CCA.

3.12 To the extent that there is a failure to comply with a guarantee under sections 54 to 59 in schedule 2 of the CCA in respect of goods which are not goods of a kind that are ordinarily acquired for personal, domestic or household use or consumption, then to the extent permitted by law, the Contractor's liability is limited to one or more of the following, at the election of the Contractor:

(a) the replacement of the goods or the supply of equivalent goods;

(b) the repair of the goods;

(c) the payment of the cost of replacing the goods or of acquiring equivalent goods;

(d) the payment of the cost of having the goods repaired.

3.13 To the extent that there is a failure to comply with a guarantee in respect of the supply of services under sections 60 to 62 in schedule 2 of the CCA, then to the extent permitted by law, the Contractor's liability is limited to one or more of the following, at the election of the Contractor:

(a) supplying the services again; or

(b) payment of the cost of having the services supplied again.

4. Relationship

4.1 The Contractor agrees that it will not be taken to be and must not represent that it is the employee, partner, officer and/or agent of the Customer.

5. Deliverable Specific Issues

DELIVERY

5.1 The Contractor must deliver any Deliverables to the Site between the hours stated in Item 12 of the General Order Form as otherwise agreed in writing.

5.2 The Contract Price is inclusive of any additional or separate delivery costs, unless otherwise stated in the Order Documents including Item 11 of the General Order Form.

5.3 The Parties must perform their obligations in accordance with any Service Level Agreement. Either Party may periodically review the Service Level Agreement and may recommend or request a change to a Service Level Agreement. Any change to a Service Level Agreement must be implemented as a Change Request in accordance with the procedures stated in Schedule 4 – Variation Procedures.

DOCUMENTATION

5.4 The Contractor must provide the User Documentation and any Bespoke User Documentation to the Customer in either hard copy or electronic format. If the User Documentation is provided in hard copy format:

(a) the Contractor must make available, at no additional cost to the Customer, at least one copy of the User Documentation and such related material as the Contractor usually makes available free to its other customers, upon supply of the Product or Service to the Customer, or at the time(s) stated in the PIPP; and

(b) additional copies of the User Documentation must, if requested by the Customer, be provided by the Contractor at the Price stated in Item 15 of the General Order Form, or if the Price is not stated in the Order Documents, at the Contractor's then current commercial price.

5.5 The Contractor must ensure that any User Documentation and Bespoke User Documentation:

(a) is of a reasonable standard in terms of its presentation, accuracy and scope;

(b) provides an explanation of functions, capacity and operations of the relevant Product, Service or Deliverable;

(c) in the case of User Documentation only, is the most current and up-to-date version available; and

(d) is in the English language.

5.6 Where the Customer identifies any Defect in the User Documentation or Bespoke User Documentation within 30 days of the date of supply of the User Documentation or Bespoke User Documentation to the Customer, the Contractor must amend the defective User Documentation or Bespoke User Documentation and must promptly supply to the Customer the amended User Documentation or Bespoke User Documentation (or the relevant part) at no additional cost to the Customer.

5.7 The Contractor grants the Customer a right to use the User Documentation in connection with the authorised use of the Product or Service including for training purposes. Where the User Documentation is only provided in an electronic format the Customer may print ad hoc pages of the User Documentation. The Customer must not otherwise copy or adapt (including incorporating parts of the User Documentation into other Documents) without the Contractor's prior written consent (not to be unreasonably withheld).

NORMAL USE

5.8 For the purposes of the CCA, the Deliverables provided under this Customer Contract are ordinarily supplied for the use in connection with processing internal data for business applications which:

(a) do not require very high levels of availability or completely error free use;

(b) are not used for a Prescribed Use;

(c) are not for resale.

If the Parties agree that the Deliverables can be used for any other purpose that other purpose must be set out on the Order Documents.

PRODUCT SAFETY

5.9 If the Contractor determines that a Deliverable requires an engineering change that is classified by the supplier or manufacturer as being mandatory in order to ensure product safety then:

(a) the Contractor will, at its own cost, provide a 'user installable part' which the Customer must promptly install; or

(b) the Customer will allow the Contractor to Install the engineering change, at the Contractor's own cost.

5.10 The Customer agrees that:

(a) the Contractor may maintain such information (including Personal Information) as may be required to assist the Contractor in complying with its obligations under the CCA or other law in respect of product safety, including product recall; and

(b) it will promptly give the Contractor Notice in Writing of any information that the Contractor may need in order for the Contractor to provide any notice relating to product safety that it may be required to provide under the CCA or other law.

6. Delivery Management

PROJECT MANAGEMENT

6.1 Where the Customer Contract is made under a Head Agreement, the Customer shall have the right to appoint a representative of the Contract Authority to act as the Customer's agent for the purpose of exercising any of the Customer's rights arising out of, or in connection with, the Customer Contract.

6.2 The following clauses 6.3 to 6.9 apply if and to the extent stated in the Order Documents.

MANAGEMENT COMMITTEE

6.3 If it is stated on the General Order Form that a management committee is to be established, the Parties must agree and establish a management committee and a process for the conduct of the management committee's business by the date stated in the Order Documents.

6.4 The management committee must consist of the Party's project managers or officers, or such other persons as stated in the Order Documents including Item 16 of the General Order Form.

6.5 All members of the management committee must be authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

6.6 The management committee must:

(a) review and monitor progress under the Customer Contract; and

(b) carry out any other functions stated in Item 16 of the General Order Form.

6.7 Unless agreed otherwise, the members of the management committee or their authorised delegates must meet weekly at the Customer's offices at an agreed time.

6.8 At least 1 Business Day prior to a management committee meeting, the Contractor's project manager must submit to the Customer's project manager a report of progress under the Customer Contract including:

(a) details (including dates) of Deliverables and Milestones commenced, completed or Accepted;

(b) details of any delays or issues arising from the project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

(c) a review of any:

(i) minutes and actions from the last meeting;

(ii) issues log;

(iii) risk management plan, which must be prepared and maintained in accordance with AS/NZS ISO 31000 Risk Management Standard or equivalent, unless agreed otherwise in writing;

(iv) details of any outstanding invoices and any payments that are about to become due;

(d) draft updates of relevant parts of the Contract Specifications;

(e) any new Change Requests or Contract Variations (if applicable); and

(f) details of the progress of any draft Change Requests or Contract Variations (if applicable).

6.9 If the Customer disagrees with the details recorded in the report, then the Customer must, within 2 Business Days of receipt of the report, make a written endorsement on the report recording its version of the details. The amended report must be provided to the Contractor within 1 Business Day of the Customer updating the report.

PERFORMANCE REVIEWS

6.10 If it is stated in Item 17 of the General Order Form that the Parties must conduct a service and performance review of the Contractor's performance of the Customer Contract, then the Parties must conduct such reviews at the intervals and in accordance with the other requirements, including any obligations under any Service Level Agreement, stated in the Order Documents.

6.11 All reviews must be undertaken by representatives of both Parties who have the authority, responsibility and relevant expertise in financial and operational matters appropriate to the nature of the review. Where the Customer Contract is made under a Head Agreement, either Party may request the involvement of the Contract Authority in any review.

SITE SPECIFICATIONS

6.12 Where it is stated in Item 18 of the General Order Form that a Site Specification is required, the Contractor must inspect the Site and provide the Customer with a Site Specification for the Customer's approval.

6.13 The Contractor must make any amendment to the Site Specification that is reasonably required by the Customer, providing such amendments are requested prior to the delivery of the Deliverables. Where the Contractor reasonably believes that the required amendment will materially affect the Contractor's ability to perform its obligations under the Customer Contract, it will notify the Customer and the Parties will discuss in good faith whether any Change Request is required to deal with such required amendment.

IMPLEMENTATION PLANNING STUDY

6.14 Where it is stated in Item 19 of the General Order Form that the Contractor must provide an implementation planning study, the Contractor must complete the implementation planning study in accordance with the requirements in Item 19 of the General Order Form.

6.15 Any implementation planning study must meet the objectives stated in Item 19 of the General Order Form which may include:

(a) the Contractor's assessment of the scope and complexity of the project;

(b) the required Deliverables;

(c) the resources required (including any resources to be made available by the Customer); and

(d) the development of a PIPP or a Service Level Agreement.

6.16 The Contractor must deliver the implementation planning study to the Customer by the date stated in Item 19 of the General Order Form, and unless it is stated in the Order Documents that it is to undergo Acceptance Tests in accordance with clause 10.1(b), the AAD for the implementation planning study is determined in accordance with clause 10.1(a).

PROJECT SCHEDULE

6.17 The Parties must perform their obligations at the times and in the manner stated in the PIPP as stated in Item 20 of the General Order Form.

CHANGE CONTROL

6.18 Either Party may recommend or request a change to the PIPP or any other part of the Customer Contract. Any change to the PIPP or any other part of the Customer Contract must be implemented as a Change Request in accordance with the variation procedures stated in Schedule 4 – Variation Procedures, subject to clauses 26.1 to 26.2.

STAGED IMPLEMENTATION

6.19 The Parties agree to perform the Customer Contract in accordance with the Stages stated in the PIPP.

6.20 The Customer must give written notice to the Contractor within 10 Business Days (or such longer period stated in Item 20 of the General Order Form) of the end of each Stage as to whether it wishes the Contractor to commence the following Stage.

6.21 The Contractor must not commence any work on Stage two or any subsequent Stage until it receives written notice from the Customer to proceed with the work in that Stage. The signing of the Customer Contract is deemed to be sufficient notification to proceed with work in Stage one.

6.22 Nothing in the Customer Contract shall be construed as obliging the Customer to give the written notice referred to in clause 6.21 in respect of Stage two or any other subsequent Stage.

6.23 The Customer's liability to the Contractor for not proceeding to a subsequent Stage shall be limited to those costs that have been stated in the Order Documents.

EXTENSION OF TIME

6.24 Each Party must do all it reasonably can to promptly inform the other of anything that it becomes aware of which is likely to affect the cost, quality or timing of delivery of the Deliverables, and the Parties must then investigate how to avoid or minimise any adverse effect on the Customer Contract.

6.25 The Customer may consent to a request for extension of time provided that the Contractor provides the Customer with a plan indicating in detail the steps the Contractor proposes to take to minimise the impact of any delay.

6.26 The Contractor may be entitled to a reasonable extension in time and any damages, costs or expenses (calculated using the rates set out in the Customer Contract, or if none, are stated at the Contractor's then current commercial rates) that arise out, of or in connection with a delay or increase in costs which has occurred because of:

(a) the Customer's failure to perform its obligations in accordance with the Customer Contract;

(b) the act or omission of any person who is identified in the Order Documents as being organised by, or under the direction of, the Customer;

(c) any change to access to the Customer's Site (including denial or suspension of access under clause 7.3) unless the change to access is due to an adverse finding arising out of an investigation into the conduct of the Contractor or its Personnel or a breach of clause 7.2; or

(d) any change to any of the Customer's secrecy or security requirements provided that the Contractor will mitigate any expenses incurred or delay caused as a result of complying with such changed requirements.

6.27 The Contractor must submit a Change Request to the Customer in respect of the relevant extension of time or change to any amount payable by the Customer in accordance with Schedule 4 – Variation Procedures within 5 Business Days of becoming aware of the relevant delay under clause 6.26.

LIQUIDATED DAMAGES

6.28 Where the Parties have agreed in Item 21 of the General Order Form that liquidated damages will be payable for the late completion of an LD Obligation, clauses 6.29 to 6.34 apply.

6.29 Where the Contractor has not completed an LD Obligation by the Due Date, or if the Due Date has been varied by a Change Request or otherwise in accordance with the Customer

Contract, such varied Due Date, the Contractor must pay liquidated damages stated in Item 21 of the General Order Form to the Customer unless the late completion of the LD Obligation is:

(a) caused by an Event;

(b) caused by the Customer or its Personnel;

(c) caused by the act or omission of any person who is identified in the Order Documents as being organised by, or under the direction of, the Customer; or

(d) permitted because an extension of time for completion of the LD Obligation has been granted by the Customer in accordance with the Customer Contract.

6.30 The Customer must promptly give the Contractor Notice in Writing setting out the grounds on which the Customer claims that liquidated damages are payable.

6.31 Each Party acknowledges that the liquidated damages stated in Item 21 of the General Order Form are a genuine pre-estimate of the loss, damage or expense that the Customer will suffer during the period in which liquidated damages are payable under clause 6.32 as a result of the Contractor not completing the LD Obligation by the Due Date.

6.32 The Contractor must pay any liquidated damages that are due from the Due Date until the earlier of:

(a) the date that the Contractor successfully completes the LD Obligation in relation to which the liquidated damages have been applied; or

(b) the date on which the maximum number of days for which liquidated damages are payable as stated in Item 21 of the General Order Form have elapsed (the **Longstop Date**).

6.33 Liquidated damages paid under clause 6.32:

(a) are the Customer's sole and exclusive financial remedy for the Customer's loss, damage and expense that the Customer suffers during the period in which liquidated damages are payable under clause 6.32 out of or in connection with the Contractor not completing the LD Obligation by the Due Date, subject only to the Customer's rights under clause 6.34; but

(b) do not relieve the Contractor from any other liability or from meeting any other obligation under the Customer Contract.

6.34 The Customer may, at any time during the period in which liquidated damages are payable under clause 6.32, issue a Notice in Writing of a Substantial Breach in respect of the Contractor not completing the LD Obligation by the Due Date specifying a period during which the Contractor is required to remedy that Substantial Breach, such period to be the greater of:

(a) 10 Business Days;

(b) the period during which liquidated damages are payable for that Substantial Breach; or

(c) such longer period stated in the Notice in Writing,

(d) and if the Contractor has not remedied that Substantial Breach (by completing the LD Obligation) by the end of such period, the Customer may terminate the Customer Contract immediately by Notice in Writing to the Contractor.

6.35 The Parties agree that where the Contractor has not successfully completed the LD Obligation in relation to which the liquidated damages have been applied by the Longstop Date, the payment of liquidated damages by the Contractor under clause 6.32 is without prejudice to the Customer's right to claim damages at large in respect of loss, damage and expense that arises after the Longstop Date out of or in connection with the Contractor not completing the LD Obligation by the Longstop Date.

CUSTOMER SUPPLIED ITEMS (CSI)

6.36 The Customer must provide and maintain the CSI at the times and in accordance with the requirements stated in the Order Documents including Item 22 of the General Order Form.

6.37 The Customer must enforce any agreement with a third party under which products or services of that third party are being provided to the Contractor as CSI (**Third Party CSI**), including support and maintenance contracts, to the extent that the relevant third party's failure to provide or resolve any issues with the Third Party CSI materially impacts the Contractor's ability to perform its obligations under the relevant Customer Contract.

6.38 The Contractor must:

(a) not use any CSI other than for the purposes of the Customer Contract without the prior written consent of the Customer;

(b) not part with possession of any CSI unless the Customer has provided its prior written consent, nor create or allow the creation of any lien, charge or mortgage over any CSI;

(c) take all reasonable care of all CSI including accounting for, preserving, installing or handling the CSI in accordance with the Order Documents;

(d) not modify any CSI without the prior written consent of the Customer;

(e) promptly inform the Customer of any loss, destruction or damage to any CSI; and

(f) comply with any reasonable instruction of the Customer for preserving, forwarding or disposal of any damaged CSI; and

(g) pay the costs, if any, stated in Item 22 of the General Order Form, for CSI.

6.39 If the CSI is no longer required for the purposes of the Customer Contract, it must be returned to the Customer or destroyed at the Customer's request as soon as practicable, unless other arrangements are agreed.

6.40 Provided the Contractor complies with its obligations under clauses 6.38(c) to 6.38(f), the Customer must repair or replace CSI within a reasonable time of becoming aware that the CSI does not comply with the requirements stated in the Order Documents.

CUSTOMER ASSISTANCE

6.41 During the Contract Period, the Customer must:

(a) make available to the Contractor all relevant instructions, information, data, documents, specifications, plans, drawings and other materials as specified in Item 22 of the General Order Form or as otherwise agreed in writing with the Contractor; and

(b) answer reasonable queries made by the Contractor relating to the Customer's requirements in connection with the Customer Contract.

ESCROW

6.42 If stated in Item 23 of the General Order Form, the Contractor must arrange:

(a) for itself, the Customer and an escrow agent approved by the Customer to enter into an Escrow Agreement in relation to the Escrow Materials; or

(b) for the Customer to become a party to an escrow arrangement which already covers the Escrow Materials which the Customer regards as a satisfactory arrangement.

6.43 Any escrow arrangements to which the Customer becomes a Party under clause 6.42 must endure for at least the period stated in Item 23 of the General Order Form unless otherwise agreed. The Parties will bear the costs connected with such escrow arrangements in the proportions agreed by them in the Escrow Agreement.

6.44 The Contractor must consult with and comply with the reasonable directions of the Customer in any negotiations with the escrow agent arising under clauses 6.42.

BUSINESS CONTINGENCY

6.45 If stated in Item 24 of the General Order Form that a Business Contingency Plan is required, the Contractor must, within the time stated in Item 24 of the General Order Form or as otherwise agreed in writing, prepare a Business Contingency Plan for the approval of the Customer.

6.46 The Business Contingency Plan must include the details stated in Item 24 of the General Order Form or as otherwise agreed in writing. The Contractor must provide the Customer with a copy of the approved Business Contingency Plan.

6.47 The Business Contingency Plan must be reviewed, updated and tested by the Contractor at the intervals stated in Item 24 of the General Order Form.

6.48 If there is an interruption to the Customer's business that is contemplated by the Business Contingency Plan the Contractor must perform the obligations in the Business Contingency Plan. The Customer must provide the Contractor with any assistance reasonably required by the Contractor to create and perform the Business Contingency Plan.

7. Access

ACCESS TO CUSTOMER'S SITE

7.1 Without prejudice to the Contractor's obligations under clauses 6.12 and 6.13, the Customer must prepare and maintain the Site:

(a) to enable the supply of the Deliverables; and

(b) in accordance with the Site Specification that is approved under clauses 6.12 to 6.13, or as otherwise stated in Item 18 of the General Order Form.

7.2 Where the Customer provides the Contractor with access to the Customer's Site, the Contractor:

(a) must ensure that its Personnel comply with the reasonable requirements and directions of the Customer with regard to conduct, behaviour, safety and security; and

(b) is liable for any damage to the extent that such damage is caused by the negligent act or omission of its Personnel on the Customer's Site.

7.3 The Customer may temporarily deny or suspend access to the Customer's Site in its discretion.

7.4 The Contractor must comply, and must ensure that its Personnel comply, with the secrecy and security requirements of the Customer as stated in Item 25 of the General Order Form, or of which the Customer subsequently provides the Contractor by written notice.

8. Personnel

PERSONNEL - GENERAL

8.1 Neither Party may, without the prior written consent of the other Party, engage, employ or induce or cause a third party to induce the other Party's Personnel engaged in the performance of the Customer Contract to enter into a contract for service or a contract of employment with it.

8.2 The restriction in clause 8.1 shall apply during the Contract Period and for a period of six months after the end of the Contract Period.

8.3 A general solicitation for employment which is placed in good faith such as a newspaper advertisement shall not constitute a breach of clause 8.1.

8.4 The Parties agree that the restrictions in clauses 8.1 to 8.3 are necessary to protect the legitimate interests of each Party.

8.5 The Customer must make available its Personnel to work with the Contractor as stated in the Order Documents including Item 26 of the General Order Form. The Parties will identify such Personnel and their roles in the Order Documents.

8.6 The Customer must use reasonable efforts to ensure that its Personnel who are made available to work with the Contractor have the requisite authority, qualifications, competencies, skills and experience to perform their tasks.

8.7 The Contractor must ensure a safe system of work for any of the Customer's Personnel who the Customer makes available to perform work under the control and direction of the Contractor at the Contractor's premises.

SPECIFIED PERSONNEL

8.8 The identity and roles of any Specified Personnel must be stated in Item 27 of the General Order Form.

8.9 If Specified Personnel are unable or not suitable in the reasonable opinion of the Customer to undertake the work assigned to them the Contractor must provide replacement personnel acceptable (on reasonable grounds) to the Customer at no additional charge as soon as is practicable.

APPROVED AGENTS AND SUBCONTRACTORS

8.10 The Contractor may supply Deliverables to the Customer through Approved Agents.

8.11 If a Customer Contract is entered into between the Customer and an Approved Agent, the Contractor is deemed to have entered into a Customer Contract with the Customer.

8.12 The Contractor must ensure that its Approved Agents supply the Deliverables only in accordance with the terms of the Customer Contract under which the Approved Agent is to supply the Deliverables.

8.13 If requested in writing by the Customer, the Contractor must arrange for its Approved Agents to execute a Deed Poll substantially in the form of Schedule 6 – Deed Poll.

8.14 The Contractor must not subcontract the performance or supply of any Services under the Customer Contract without obtaining the prior written consent of the Customer which will not be unreasonably withheld or delayed and which may be given on such conditions as the Customer thinks fit.

8.15 Where the Customer believes that any Subcontractor is in material breach of its obligations to the Contractor, or its performance of obligations or services is unsatisfactory, so that the Contractor is likely to be in material breach of the Customer Contract as a result, the Customer may:

(a) provide Notice in Writing to the Contractor setting out the details of its concerns;

(b) meet with the Contractor within 3 Business Days of the Contractor's receipt of the Notice in Writing to discuss the concerns; and

(c) if, following the discussions with the Contractor, the Customer is satisfied that the Contractor will be in material breach of the Customer Contract as a result of the performance of the Subcontractor, the Customer may give Notice in Writing that it is withdrawing its consent to allow the Subcontractor to continue to work in connection with the Customer Contract and require the Contractor to procure that the Subcontractor promptly ceases performing any work in connection with the Customer Contract subject to any contrary requirements of the Customer in respect of effecting an orderly transition notified to the Contractor, and in such circumstances, the Contractor agrees that the Customer will have no liability whatsoever to the Contractor for any loss suffered by the Contractor arising out of any termination of, or the continuation of, the relevant subcontract.

8.16 The Contractor:

(a) must ensure that each Subcontractor is aware of all the terms and conditions of the Customer Contract that are relevant to the Subcontractor's performance of its work;

(b) is not relieved of its liabilities and obligations arising out of, or in connection with, a Customer Contract by subcontracting any work; and

(c) must ensure that the Subcontractor ceases work upon receipt of a Notice in Writing from the Customer of withdrawal of the consent given under clause 8.15(c).

8.17 If stated in Item 28 of the General Order Form, the Contractor must obtain from the Subcontractor a signed statutory declaration substantially in the form of Schedule 7 – Statutory Declaration by Subcontractor.

9. General Warranties

CONTRACTOR WARRANTIES

9.1 The Contractor warrants to the Customer that:

(a) as at the Commencement Date, the Contractor is properly constituted and has the right and authority to enter into the Customer Contract;

(b) to the best of its knowledge and belief there is no Conflict of Interest of the Contractor or its Personnel as at the Commencement Date, and during the Contract Period the

Contractor will use its reasonable efforts not to permit a Conflict of Interest of the Contractor or its Personnel to arise in the performance of its obligations;

(c) the information provided to the Customer in terms of the structure, viability, reliability, insurance cover, capacity, experience and expertise of the Contractor and its Personnel, was to the best of the Contractor's knowledge and belief correct when it was provided to the Customer;

(d) as at the Commencement Date, to the best of its knowledge and belief the Contractor has all the necessary licences, approvals and consents necessary to perform its obligations under the Customer Contract;

(e) it will not maliciously or negligently introduce any Virus into the Customer's systems during the Contract Period;

(f) that to the best of its knowledge and belief, the Contractor has the necessary Intellectual Property Rights and has procured the necessary consents in relation to Moral Rights, to grant the Customer the rights to use and/or own (if applicable) the Deliverables (other than any open source software) in accordance with the Customer Contract;

(g) it will perform its obligations in accordance with:

(i) the Statutory Requirements,

(ii) any other laws that are stated in Item 30 of the General Order Form;

(iii) the Worst Forms of Child Labour Convention,1999 (ILO Convention 182) ensuring that the Deliverables have not been produced using "worst forms of child labour" as defined; and

(iv) the codes, policies, guidelines and standards listed in Item 9 of the Head Agreement Details and Item 30 of the General Order Form;

(h) it will maintain the quality standard accreditation stated in Item 29 of the General Order Form during the Contract Period; and

(i) it is responsible for the acts and omission of its Personnel as if they were its own acts and omissions.

9.2 All licences, approvals and consents obtained by the Contractor in relation to the Customer Contract must be obtained at the Contractor's cost.

CUSTOMER WARRANTIES

9.3 The Customer warrants to the Contractor that:

(a) it has complied with all laws and policies, including procurement policies in awarding the Customer Contract to the Contractor;

(b) it will provide the Contractor and its Personnel with a safe place to work;

(c) it will supply any CSI in accordance with the requirements stated in the Order Documents;

(d) it is responsible for the acts and omission of its Personnel as if they were its own acts and omissions;

(e) it will not maliciously or negligently introduce any Virus into the Contractor's systems during the Contract Period;

(f) that to the best of its knowledge and belief, the Customer has the necessary Intellectual Property Rights and has procured the necessary consents in relation to Moral Rights, to grant the Contractor and its Personnel the rights to use any CSI for the purpose of performing its obligations under the Customer Contract;

(g) where there is more than one Eligible Customer being represented by the Customer, the Customer acts with full authority and as the sole representative of all the Eligible Customers; and

(h) it will perform its obligations in accordance with:

(i) the Statutory Requirements,

(ii) any other laws that are stated in the Order Documents including Item 31 of the General Order Form;

(iii) the Worst Forms of Child Labour Convention,1999 (ILO Convention 182) ensuring that the Deliverables have not been produced using "worst forms of child labour" as defined; and

(iv) the codes, policies, guidelines and standards listed in the Order Documents including Item 31 of the General Order Form.

MUTUAL WARRANTIES

9.4 Each Party warrants to the other Party that during the Contract Period it will:

(a) co-operate with the other Party and its respective Personnel to ensure timely progress and fulfilment of the Customer Contract, provided that nothing in this clause 9.4 requires the disclosure of a Party's Confidential Information or granting of any Intellectual Property Rights;

(b) act reasonably and in good faith with respect to matters that arise out of, or in connection with, the Customer Contract;

(c) work together in a collaborative manner;

(d) to the extent that is reasonably possible, perform its obligations so as to avoid hindering the performance of the other Party;

(e) hold meetings (including meetings relating to planning, review and issue resolution) as necessary and report to the other Party on a regular basis to ensure the other Party is fully informed of the progress of work required under the Customer Contract; and

(f) perform its obligations and responsibilities by the dates stated in the Customer Contract.

10. Acceptance

ACCEPTANCE

10.1 The Actual Acceptance Date (**AAD**) for a Deliverable occurs:

(a) unless it is stated in Item 32 of the General Order Form that the Deliverable is required to undergo Acceptance Testing, 2 Business Days or such other period that is stated in Item 32 of the General Order Form following the delivery of the Deliverable as required in the Order Documents; or

(b) where it is stated in Item 32 of the General Order Form that the Deliverable is required to undergo Acceptance Tests, on the sooner of:

(i) the date the Customer issues a certificate of acceptance; or

(ii) on the date the Customer issues a notice that it conditionally accepts the Deliverable in accordance with clauses 10.10(b) or 10.12(c); or

(iii) on the last day of the Acceptance Test Notification Period where acceptance is deemed to have occurred in accordance with clause 10.13.

ACCEPTANCE TESTING

10.2 Where it is stated in Item 32 of the General Order Form that the Deliverable is required to undergo Acceptance Tests, Acceptance Tests must be conducted in relation to the Deliverable and the following provisions in clauses 10.2 to 10.16 will apply.

CONDUCTING ACCEPTANCE TESTS

10.3 Acceptance Testing must be completed in accordance with the requirements of the Order Documents including Item 32 of the General Order Form, or if the details of the Acceptance Tests are not stated in the Order Documents, then at least 20 Business Days before the relevant Deliverable is due to be delivered (or such other period as the Parties may agree) the Parties must agree:

(a) the identification of the Deliverables or part of the Deliverable to be tested;

(b) the allocation of each Party's responsibilities in relation to testing, including the Party responsible for conducting the Acceptance Tests;

(c) which Party is to provide the test environment, including hardware, software, power, consumables and other resources and when the environment and resources must be ready for use;

(d) the methodology and process for conducting the Acceptance Tests;

(e) the scheduling of Acceptance Tests, including the Acceptance Test Period and the Acceptance Test Notification Period;

(f) the Acceptance Criteria. The Acceptance Criteria should only test whether the Deliverable meets the Contract Specifications and other requirements of the Customer Contract and should not include any other criteria unless the Parties otherwise agree in writing; and

(g) the Acceptance Test Data. The Customer is responsible for ensuring that the Acceptance Test Data is representative of the data that will be used by the Deliverable in the Customer's business or production environment.

(h) Where the details of the Acceptance Tests are not stated in the Order Documents, the Contractor shall, not less than 60 Business Days before the relevant Deliverable is due to be delivered (or such other period as the Parties may agree), notify the Customer that details of the Acceptance Tests (including those in (a) to (g) above have not yet been agreed and must be agreed at least 20 Business Days before the relevant Deliverable is due to be delivered (or such other period as the Parties may agree). Any failure of the Parties to agree any matter relating to the Acceptance Tests will be dealt with in accordance with clause 24 below, and the 20 Business Days requirement referred to above will not apply.

10.4 The Customer must provide the Contractor with the Acceptance Test Data at least 14 Business Days prior to the start of the Acceptance Test Period.

10.5 Where the Contractor is conducting the Acceptance Tests, the Customer's representative must be available during Business Hours on each day during the Acceptance Test Period to give any assistance and/or information reasonably requested by the Contractor.

10.6 Each Party must provide all reasonable cooperation and assistance to enable the performance of any Acceptance Test.

10.7 The Parties are entitled to observe and, to the extent reasonable, participate in the performance of any Acceptance Test.

10.8 The Party conducting the Acceptance Test must provide the other Party within the Acceptance Test Notification Period a written test notification specifying:

(a) a written summary of the Acceptance Test;

(b) the results achieved from that Acceptance Test; and

(c) a Defects List (if there are any Defects).

ACCEPTANCE TEST OUTCOMES

10.9 Where at the end of the Acceptance Test Period the Acceptance Tests demonstrate that the Deliverable meets the Contract Specifications and other requirements under the Customer Contract, the Customer must issue a certificate of acceptance to the Contractor within the Acceptance Test Notification Period.

10.10 Where at the end of the Acceptance Test Period the Acceptance Tests demonstrate that the Deliverable does not meet the Contract Specifications and other requirements under the Customer Contract then, if the Defects are only Minor the Customer must give the Contractor written notice within the Acceptance Test Notification Period that the Customer either:

(a) waives the requirement for the Acceptance Test to be satisfactorily completed;

(b) conditionally accepts the Deliverable, subject to the Contractor agreeing, at its own expense, to deliver a Workaround or to otherwise rectify any item on the Defects List within the Warranty Period in a manner that is acceptable to the Customer; or

(c) accepts the Deliverable subject to an agreed reduction in the Contract Price.

10.11 Where the Customer conditionally accepts the Deliverable in accordance with clause 10.10(b) then:

(a) the AAD occurs on the date that the Customer gives written notice that it conditionally accepts the Deliverable; and

(b) the Customer may use the Deliverable in a business or production environment from the AAD.

10.12 Where at the end of the Acceptance Test Period the Acceptance Tests demonstrate that the Deliverable fails to meet the Contract Specifications and other requirements under the Customer Contract because the Defects are more than Minor Defects, then the Customer must give the Contractor written notice within the Acceptance Test Notification Period that the Customer either:

(a) waives the requirement for the Acceptance Test to be satisfactorily completed;

(b) requires that the Contractor remedy the Defects on the Defects List, in which case the Contractor must remedy the Defects on the Defects List at its own expense within a reasonable period of time, and re-submit the Deliverable to further Acceptance Testing using the process in clauses 10.2 to 10.16 (except that the Acceptance Testing is restricted to testing the items that were on the Defects List and any necessary regression testing), at the Contractor's expense;

(c) conditionally accepts the Deliverable, subject to the Contractor agreeing, at its own expense, to deliver a Workaround or to otherwise rectify any item on the Defects List within the Warranty Period in a manner that is acceptable to the Customer;

(d) accepts the Deliverable subject to an agreed reduction in the Contract Price; or

(e) subject to the Customer having provided the Contractor with one opportunity to re-submit the Deliverable for further Acceptance Testing, the Customer may, without limiting any other remedy, reject the Deliverable and require the removal of the Deliverable and any materials associated with the rejected Deliverable and require the restoration of anything affected by the Deliverable to its pre Customer Contract state, at the Contractor's expense.

10.13 The Deliverables are deemed accepted if:

(a) the Customer does not notify the Contractor within the Acceptance Test Notification Period that the Deliverable is rejected or conditionally accepted;

(b) where the Customer is to perform the Acceptance Tests, the Customer fails to perform any Acceptance Test within the Acceptance Test Period for any reason, except for any delay resulting from any action of the Contractor unless otherwise agreed;

(c) the Customer gives written notice that it waives the requirement for the Deliverable to pass the Acceptance Tests;

(d) the Parties agree that the Deliverable is accepted based on an agreement to a reduction in the Contract Price; or

(e) the Customer uses the Deliverable for its business purposes and/or in a production environment without the prior written consent of the Contractor.

10.14 Where the Acceptance Test relates to a Deliverable that is a Document, it is not a failure to provide the Document in accordance with the Contract Specifications and the other requirements of the Customer Contract where the Customer requests a change to:

(a) any opinion expressed in the Document, provided that the opinion expressed in the Document is the professional opinion held by the Contractor;

(b) the style, formatting or layout of the Document, unless the style, formatting or layout is part of the Contract Specifications; or

(c) semantics.

10.15 The Warranty Period (if any) of a Deliverable commences on the AAD of that Deliverable.

10.16 In the event of power failure, air-conditioning failure or other cause outside the control of the Contractor:

(a) the Customer must approve an extension of the Acceptance Test Period to accommodate any delays caused directly as a result of those circumstances; and

(b) the Contractor must ensure that the Deliverable is ready to resume or recommence Acceptance Tests when conditions are again satisfactory and stable.

11. Payment and Invoicing

PAYMENT

11.1 In consideration for the Contractor providing a Deliverable in accordance with the Customer Contract, the Customer must pay the Contractor the Contract Price in the amounts and at the times stated in the Order Documents (including the PIPP) and/or Item 14 of the General Order Form. If the time for payment is not stated in the Order Documents and/or Item 14 of the General Order Form, then the Contract Price is due:

(a) on AAD for Products;

(b) monthly in arrears for Recurring Services, other than Services provided under Modules 2 and 5;

(c) annually in advance for Services provided under Modules 2 and/or 5.

11.2 The Prices are fixed for the Contract Period, unless otherwise stated in the Order Documents including Item 14 of the General Order Form.

11.3 A Customer may pay any amount due under the Customer Contract by credit/debit card or electronic facility stated in Item 33 of the General Order Form. The Contractor may only charge a fee for payment by credit/debit card where the fee is stated in Item 33 of the General Order Form.

11.4 If the Contractor refuses, neglects or fails to perform an obligation to provide a Deliverable in accordance with the Customer Contract, the Customer may withhold the payment associated with that failure until the Contractor performs the relevant obligation in accordance with the Customer Contract unless the Customer Contract entitles the Customer to some alternative specific financial remedy for such refusal, neglect or failure, for example liquidated damages or services credits, but not a general right to damages.

11.5 The Customer may retain a proportion of the payment for any Milestones in the amount and for the period stated in a PIPP for the due and proper performance and completion of the Contractor's delivery obligations under the Customer Contract incurred prior to the end of the Warranty Period or a period otherwise stated in the PIPP.

11.6 The Customer must upon the completion of the Contractor's delivery obligations in accordance with the Customer Contract (incurred prior to the end of the Warranty Period or a period otherwise nominated in the PIPP) pay to the Contractor any amount retained under clause 11.5.

INVOICING

11.7 The Parties agree that, subject to clauses 11.8 to 11.11, the Customer must pay the Contractor for the Deliverables within 30 days (or such other period agreed in the Order Documents including Item 14 and Item 20 of the General Order Form) of receipt of a Correctly Rendered Invoice. For the avoidance of doubt, no amount is payable by the Customer under a Customer Contract until a Correctly Rendered Invoice is received.

11.8 The Contractor must provide any further details in regard to an invoice that are reasonably requested by the Customer.

11.9 The Contractor must send any invoices for any amount due to the person at the address stated in Item 14 of the General Order Form.

11.10 The making of a payment is not an acknowledgment that the Deliverables have been supplied or accepted in accordance with the Customer Contract.

11.11 If the Customer disputes an invoiced amount the Customer must:

(a) provide the Contractor with written notice stating the amount it believes is due for payment and setting out the reasons for not paying the balance, such written notice to be given within 10 Business Days from the date of receipt of the invoice; and

(b) pay the amount it believes is due for payment by the date that payment must be made under the Customer Contract.

12. Taxes

12.1 Subject to clauses 12.2 and 12.3, the Contractor is liable for all Taxes imposed or levied in connection with the Contractor's performance of its obligations under the Customer Contract.

12.2 The Customer must pay any GST that is payable in respect of any Taxable Supply made under the Customer Contract in addition to the amount payable (exclusive of GST) for the Taxable Supply. GST is payable at the same time as the amount payable for the Taxable Supply to which it relates.

12.3 If there is any abolition or reduction, increase or introduction of any Tax, the Price that is payable for the Deliverable, or any other cost or expense that is payable under the Customer Contract must be varied so that the Contractor's net dollar margin for the Deliverable, cost or expense remains the same.

12.4 Any reference in the Customer Contract to a cost or expense to be reimbursed by one Party to another Party includes any GST payable in connection with a Taxable Supply to which that cost or expense relates, less the amount of any input tax credit that the Party requiring the reimbursement is entitled to claim.

13. Intellectual Property Rights

OWNERSHIP

13.1 All Intellectual Property Rights in:

(a) any Existing Material remain vested in the person that owns the Intellectual Property Rights at the Commencement Date (**Owner**); and

(b) any adaptation, translation or derivative of that Existing Material, vests in, or, is hereby transferred or assigned to the Owner, immediately upon creation.

CONTRACTOR OWNED NEW MATERIAL

13.2 The provisions of clauses 13.3 to 13.5 apply to New Material, unless clause 13.10 applies.

13.3 All Intellectual Property Rights in any New Material vests in, or, is hereby transferred or assigned to, the Contractor, immediately upon creation.

13.4 On the AAD of a Deliverable that incorporates the relevant New Material, the Contractor grants the Customer a non-exclusive, perpetual, irrevocable, royalty free, transferable licence to use, copy, adapt, translate, reproduce and in any way exploit that New Material in connection with, or for the operation, modification, support and/or use of, the Deliverable in which it is incorporated, subject to the restrictions set out in clause 13.5.

13.5 The licence to New Material in clause 13.4:

(a) does not permit the Customer to disclose the New Material to any other person, except as stated in clauses 13.5(c) to (e);

(b) does not permit the Customer to manufacture, sell, license, transfer, commercialise or otherwise exploit any of the New Material or any Existing Material except as stated in clauses 13.5(c) to (e);

(c) permits the Customer to sublicense any of the rights in clause 13.4 without additional charge to any Division of the Government Service as defined under the *Public Sector Employment and Management Act* 2002 (NSW), a NSW Public Sector Service (as defined under the *Public Sector Employment and Management Act* 2002 (NSW), a NSW Government Agency (as defined in the *Interpretation Act* 1987 (NSW), and any Public Health Organisation as defined under the *Health Services Act* 1997 (NSW), where the Customer is a Division of the Government Service as defined under the *Public Sector Employment and Management Act* 2002 (NSW), a NSW Public Sector Service (as defined under the *Public Sector Employment and Management Act* 2002 (NSW), a NSW Government Agency (as defined in the *Interpretation Act* 1987 (NSW), or a Public Health Organisation as defined under the *Health Services Act* 1997 (NSW);

(d) permits the Customer's subcontractors to access the New Material, without additional charge, for the internal purposes of the Customer provided that, unless otherwise required by the Contractor, the Customer's subcontractor first signs an agreement or undertaking in a form reasonably acceptable to the Contractor that protects the use and disclosure of the New Material in the same manner as stated in the Customer Contract; and

(e) permits the Customer to sublicense any of the rights in clause 13.4 without additional charge, (on one or more occasions) on a limited time basis to a contractor that is providing outsource services to the Customer that includes the operation of the New Material, provided that:

(i) the New Material is used solely for the internal business purposes of the Customer for the period of the outsource arrangement and the sublicense automatically terminates at the end of the period of the outsource arrangement; and

(ii) unless otherwise required by the Contractor, the contractor first signs an agreement or undertaking in a form reasonably acceptable to the Contractor that protects the use and disclosure of the New Material in the same manner as stated in the Customer Contract.

EXISTING MATERIAL

13.6 On the AAD of a Deliverable that incorporates the Contractor's Existing Material, the Contractor grants the Customer a non-exclusive licence:

(a) if that Existing Material is Licensed Software; to that Existing Material on the terms and conditions of the license of that Licensed Software under the relevant Module;

(b) if that Existing Material is an adaptation, translation or derivative of Licensed Software; to that Existing Material on the same terms and conditions as the licence for the Licensed Software stated in clause 13.7(a);

(c) if that Existing Material is a tool, object library or similar routine that is not included in the Existing Materials stated in clauses 13.7(a) or 13.7(b); to use, reproduce and adapt that Existing Material for the Customer's own internal use in connection with, or for the operation, modification, support and/or use of, that Deliverable; and

(d) if that Existing Material is a Document Deliverable and any adaptation, translation or derivative of that Existing Material; to use that Existing Material for the Customer's internal use.

13.7 On the AAD of a Deliverable that incorporates Existing Material that is owned by a third party, including third party software, the Customer is granted a non-exclusive licence to that third party Existing Material to:

(a) use, reproduce and adapt that third party Existing Material on the terms and conditions, and for the fees, stated in Item 34 of the General Order Form; or

(b) if no terms and conditions or fees are stated in Item 34 of the General Order Form; to use, reproduce and adapt that third party Existing Material for the Customer's own internal use in connection with, or for the operation, modification, support and/or use of, that Deliverable.

13.8 Where the Contractor uses a methodology in providing any Deliverable, the Contractor grants the Customer a non-exclusive licence to use that methodology during the Contract Period solely for the purposes of receiving the benefit of the Services under the Customer Contract or assisting the Contractor perform its obligations under the Customer Contract.

13.9 The Contractor may charge for any license to use any of its Existing Material, such fees to be stated in Item 34 of the General Order Form.

CUSTOMER OWNED NEW MATERIAL

13.10 If it is stated on the General Order Form that this clause applies to some or all of the New Materials and subject to clauses 13.12 and 13.13, upon the AAD of the relevant Deliverable that incorporates the New Material:

(a) any Intellectual Property Rights in the New Material vests in, or is hereby transferred or assigned by the Contractor to, the Customer; and

(b) the Customer grants the Contractor a non-exclusive, perpetual, irrevocable, royalty free, transferrable licence to the New Material to use, copy, adapt, translate, manufacture and in any other way exploit the Intellectual Property Rights in that New Material.

CUSTOMER MATERIAL

13.11 The Customer grants the Contractor a non-exclusive, non-transferable licence for the Contract Period for the Contractor and its Personnel to use the Customer's Materials to the extent necessary for the Contractor to perform its obligations under the Customer Contract.

KNOW HOW ETC

13.12 Subject to the restrictions on the disclosure of confidential information:

(a) the Contractor will retain all right, title and interest in and to all know-how, Intellectual Property Rights, methodologies, processes, technologies, algorithms, software, development tools or forms, templates or output used in performing its obligations under the Customer Contract which are based on trade secrets or proprietary information of the Contractor; and

(b) the Contractor will be free to use the ideas, concepts, methodologies, processes and know-how that are used, developed or created in the course of performing the obligations under the Customer Contract and may be retained by the Contractor's Personnel in intangible form.

OPEN SOURCE LICENCE

13.13 Nothing in this clause 13 affects the Intellectual Property Rights in any open source software. Any Intellectual Property Rights in any open source licence are subject to the terms of the open source licence under which it is provided.

14. Confidentiality

14.1 Except to the extent necessary to comply with any Statutory Requirement or government policy relating to the public disclosure of Confidential Information, neither Party will make public, disclose or use any Confidential Information of the other Party except in accordance with the Customer Contract, unless the other Party gives its prior written consent.

14.2 Each Party may disclose the Confidential Information of the other Party:

(a) to the Contract Authority;

(b) the Director General, NSW Department of Finance and Services and to its Personnel;

(c) to its Personnel where the disclosure is essential to enable them to carry out their duties in connection with the Customer Contract or any Head Agreement; or

(d) to its Personnel, Related Companies and their directors, officers, employees, agents, contractors, lawyers, accountants, insurers, financiers and other professional advisers where the disclosure is in connection with advising on, reporting on, or facilitating the Party's performance under, the Customer Contract or any Head Agreement; or

(e) if the receiving Party is required to disclose by law, order of a court or tribunal of competent jurisdiction or the listing rules of an applicable securities exchange.

14.3 Each Party must ensure that any Confidential Information of the other Party is used solely for the purposes permitted under clause 14.2.

14.4 The Customer may at any time require the Contractor to arrange for its Subcontractors to execute without delay a Deed of Confidentiality between the Customer and the Subcontractor substantially in the form of Schedule 8 – Deed of Confidentiality.

15. Privacy

15.1 The Contractor must:

(a) use, access, retain or disclose Personal Information obtained in connection with the Customer Contract only for the purpose for which the Personal Information was acquired;

(b) not do any act or engage in any practice that would breach an IPP, or which if done or engaged in by the Customer, would be a breach of that IPP;

(c) comply with, carry out and discharge the obligations contained in the IPPs as if it were the Customer carrying out and discharging those obligations;

(d) notify the Customer immediately upon becoming aware of a breach or possible breach of any of the obligations in this clause 15.1, whether by the Contractor, its Approved Agents or their Personnel;

(e) notify any individual that makes a complaint to the Contractor regarding the Contractor's acts or practices in relation to such individual's Personal Information, that the complaint may be investigated by the Privacy Commissioner;

(f) comply with all reasonable directions of the Customer in relation to the care and protection of Personal Information held in connection with the Customer Contract and take all reasonable measures to ensure that such information is protected against loss, unauthorised access or use, modification or disclosure and other misuse;

(g) ensure that any of the Contractor's Personnel who are required to deal with the Personal Information for the purposes of the Customer Contract are made aware of the obligations of the Contractor under this clause 15.1; and

(h) ensure that any agreement with any Approved Agent or Subcontractor who may be fulfilling a requirement in relation to the Customer Contract which includes the handling of Personal Information, contains the same or equivalent obligations to this clause 15.1 which are enforceable by the Contractor against the Approved Agent or the Subcontractor, as applicable.

16. Insurance

16.1 The Contractor must hold and maintain, or be an insured under, one or more insurance policies, that provide the following cover:

(a) public liability insurance with an indemnity of at least $10,000,000 in respect of each claim for the period of cover;

(b) product liability insurance with an indemnity of at least $10,000,000 for the total aggregate liability for all claims for the period of cover; and

(c) workers' compensation insurance in accordance with applicable legislation.

The Contractor must maintain the coverage required under this clause 16.1 during the Contract Period.

16.2 Where the Customer Contract is entered into under a Head Agreement, the Contractor must also hold and maintain, or be an insured under, one or more insurance policies that have been agreed by the Contractor and the Contract Authority under the Head Agreement. Details of these insurances are stated in Item 7 of the General Order Form.

16.3 If the Customer Contract is for the provision of Services, the Contractor must hold and maintain, or be an insured under, one or more insurance policies that include professional indemnity or errors and omissions insurance that provide indemnity cover of at least the amount of $1,000,000 in respect of the total aggregate liability for all claims for the period of cover. The Contractor must maintain the coverage required under this clause 16.3 during the Contract Period and until the date that is 4 years from the last day of the Contract Period.

16.4 The insurance policies in clauses 16.1(a), 16.1(b) and 16.3 must include cover for the Contractor's liability for the acts and omissions of the Contractor's subcontractors to the same extent as if they were the acts and omissions of the Contractor.

16.5 All policies of insurance must be entered into with an insurer which has a rating of A- or better by AM Best or an equivalent rating organisation at the date when cover is commenced, or for workers' compensation insurance the insurer (including any self-insurance) must be authorised by law.

16.6 The Contractor must within 30 days of the start of the Contract Period or of a request in writing from the Customer provide the Customer with a certificate of currency issued by its insurer or insurance broker (or other form of evidence acceptable to the Customer) confirming that all the insurance policies required by the Customer Contract are current and that the insurance has the required limits of cover. Where the Contractor is insured under a Related Company's insurance policy, the certificate of currency must also show that the insurance policy includes the Contractor as an insured.

16.7 The Contractor agrees to hold, maintain or be an insured under, any additional insurance stated in Item 36 of the General Order Form.

16.8 Where the Contractor does not wish to hold and maintain, or be an insured under, insurance required by clauses 16.1 to 16.5, or does not wish to enter into one or more of those insurance policies with an insurer of the type required by clause 16.5, the Contractor may make application to the Customer to be exempted from the provisions of clauses 16.1 to 16.6. Such application must be supported by such documentation as may be required by the Customer, (including the Contractor's financial records (limited to publicly available financial records where a Contractor or any of its Related Companies is publicly traded)). The Customer may accept, conditionally accept or reject the Contractor's application. The Customer must provide the Contractor with written notice within 30 days of receipt of the Contractor's application of the Customer determination under this clause 16.8, and in absence of receipt of such written notice, the Contractor's application is deemed accepted by the Customer.

16.9 Where the Customer Contract is entered into under a Head Agreement:

(a) the Customer cannot grant the Contractor consent to be exempt from any insurance requirements required under the Head Agreement;

(b) if the Contractor has obtained the Contract Authority's and the Director General's, NSW Department of Finance and Services consent to be exempt from the any insurance requirements under any Head Agreement, then the Customer must accept the Contractor's application for an application for any similar exemption under the Customer Contract.

16.10 The effecting of insurance does not limit or expand the liabilities or obligations of the Contractor under the other provisions of the Customer Contract.

17. Guarantees

PERFORMANCE GUARANTEES

17.1 Where the Customer Contract is entered into under a Head Agreement and the Contractor has provided a Performance Guarantee under that Head Agreement:

(a) the Contractor agrees that the Customer has the benefit of that Performance Guarantee provided that the Customer is a Government Agency;

(b) where the Customer is an Eligible non-Government Body, the Eligible non-Government Body cannot take the benefit of the Performance Guarantee provided to the Contract Authority under that Head Agreement, but the Eligible non-Government Body may separately agree with the Contractor that the Contractor is to provide a Performance Guarantee for the benefit of the Eligible non-Government Body under the Customer Contract in accordance with clause 17.2.

17.2 Where:

(a) the Customer Contract is not entered into under a Head Agreement; or

(b) the Customer Contract is entered into under a Head Agreement but the Contractor has not provided a Performance Guarantee under that Head Agreement,

and it is agreed in Item 37 of the General Order Form (provided that in the case of (b) above, the Contractor will notify the Contract Authority that the relevant Customer has requested a Performance Guarantee and the Contract Authority has given its written approval that a Performance Guarantee be provided for that Customer), the Contractor must arrange for a guarantor approved in writing by the Customer to enter into an agreement with the Customer substantially in the form of the agreement stated in Schedule 9 – Performance Guarantee, or such other document reasonably acceptable to the Customer. Where the guarantor is not domiciled in Australia the Customer may not refuse to accept an alternative form of guarantee solely on the basis that the jurisdiction and law of the guarantee is the jurisdiction and law of the country of the guarantor. This Performance Guarantee must be provided to the Customer within 30 days of the Commencement Date, or such other period stated in Item 37 of the General Order Form.

17.3 Any Performance Guarantee that is issued in favour of a Customer that is a Government Agency and clause 17.2(b) applies, can only be enforced by the Contract Authority acting on behalf of the Customer.

FINANCIAL SECURITY

17.4 If reasonably required by the Customer and agreed in Item 38 of the General Order Form, the Contractor must provide a Financial Security in the amount stated in Item 38 of the General Order Form substantially in the form of the agreement stated in Schedule 10 – Financial Security, or in the standard form that is usually provided by the issuing entity. The Contractor must, following such a request, ensure that the Financial Security is provided within 14 days of the Commencement Date, or such other period as agreed in Item 38 of the General Order Form.

17.5 The Financial Security will be held as security for the due and proper performance and completion of all the obligations of the Contractor under the Customer Contract.

17.6 The Financial Security must be issued by an Australian domiciled bank, insurance company or other financial institution (**Issuer**) acceptable to the Customer.

17.7 If the Contractor fails to properly perform and complete its obligations under the Customer Contract, and the Customer suffers loss or damage arising from, or in connection with, such failure by the Contractor, the Customer may deduct its loss or damage (in so far as those losses and damages may be payable by the Contractor taking into account the terms and

conditions of the Customer Contract, including the provisions of clause 18) from the Financial Security.

17.8 The Contractor agrees that the Customer will have no liability for any loss or damage suffered or incurred by the Contractor where the Customer exercises its rights in accordance with clause 17.7 in good faith.

17.9 Upon performance of part of the Customer Contract in accordance with its terms, the Contractor may request the Customer to consent to the discharge of the Financial Security provided under the Customer Contract and the substitution of another Financial Security in substantially the same form but for a lesser maximum aggregate sum. The Customer must not unreasonably withhold its consent to the substitution where the part performance of the Customer Contract has proportionately reduced the risk for which the Financial Security was originally provided.

17.10 The Financial Security will end on the sooner of:

(a) the date when payment is made by the Issuer up to the maximum amount required under the Financial Security;

(b) one year from the date that the last Deliverable under the Customer Contract is scheduled to pass its Acceptance Tests, or if no Acceptance Tests were required, the date that is scheduled to be 180 days from the date of delivery of the last Deliverable or performance of the last Service under the Customer Contract;

(c) the date the Customer and Contractor agree in writing to release the Issuer;

(d) the date the Customer notifies the Issuer that the Financial Security is no longer required.

17.11 The Customer must reimburse the Contractor for any reasonable costs it incurs, including the fees payable to the Issuer, in connection with providing the Financial Security. These costs and fees must be reimbursed to the Contractor within 30 days of the Contractor providing a Correctly Rendered Invoice for the costs and fees.

18. Liability

18.1 To the extent permitted by law, and subject to clauses 18.2 to 18.7, the Contractor's liability in contract (including under an indemnity), tort (including negligence), breach of statutory duty or otherwise in respect of any loss, damage or expense arising out, of or in connection with, the Customer Contract shall not exceed in aggregate for all claims that arise out, of or in connection with, the Customer Contract, the greater of:

(a) $100,000; or

(b) in respect of claims that arise from:

(i) a Non-Recurring Service or Product; two times the Contract Value for the Non-Recurring Service or Product;

(ii) a Short Term Recurring Service; the Contract Value for the Short Term Recurring Service; or

(iii) a Recurring Service other than a Short Term Recurring Service;

(A) if the claim arose after the Recurring Services had been provided for 12 months; the amount paid or unpaid but due and outstanding, for

the Recurring Service for the 12 months prior to the date that the claim first arose; or

(B) if the claim arose prior to the Contractor providing 12 months of Recurring Services; the amount that is 12 times the average monthly amount that was paid or unpaid but due and outstanding for the Recurring Service prior to the date on which the claim first arose.

18.2 In all cases, any refund of monies, payment of liquidated damages, or payment of any fees, rebates, credits, damages, losses, expenses, (including third party costs incurred and paid by the Contractor if a third party is engaged by the Customer to remedy a breach by the Contractor in accordance with the Customer Contract), liabilities or any other amounts that are stated as being payable by the Contractor in respect of any breach of the Customer Contract or under an indemnity, are included in determining whether the limitation of liability has been reached.

18.3 If the Customer Contract is for the supply of any Deliverables:

(a) where the Contract Price under the Customer Contract is greater than $20,000,000; or

(b) where the Customer Contract is for Deliverables that are to be used for a Prescribed Use,

the Parties must discuss and agree an alternative cap of liability in Item 39 of the General Order Form.

18.4 Notwithstanding any other clause in the Customer Contract, neither Party is liable to the other Party for any Consequential Loss (including under an indemnity).

18.5 Notwithstanding any other clause in the Customer Contract, the Contractor has no financial cap on its legal liability where that liability arises from:

(a) bodily injury (including sickness and death), including to the extent that the legal liability is covered by the indemnity in clause 19.1(b);

(b) loss of, or damage to, tangible property, including to the extent that the legal liability is covered by the indemnity in clause 19.1(b);

(c) breach of the Contractor's obligation of confidence under or pursuant to clause 14;

(d) the Contractor's indemnity in respect of breach of privacy obligations as stated in clause 19.1(a); or

(e) the Contractor's indemnity for IP Claims as stated in clause 19.1(c).

18.6 The liability of a Party (**Party A)** for any damage incurred by another Party (**Party B**) will be reduced proportionately to the extent that:

(a) any negligent or malicious act or omission of Party B or its Personnel; or

(b) any failure by Party B or its Personnel to comply with its obligations and responsibilities under the Customer Contract,

contributed to the damage, regardless of whether legal proceedings are brought by Party A for negligence or breach of contract.

18.7 The Parties must use their reasonable efforts to mitigate any loss arising out of or in connection with the Customer Contract.

19. Indemnities

CONTRACTOR INDEMNITY

19.1 The Contractor must indemnify and hold harmless the Customer, its officers and employees against any loss or expense which any of them pays, suffers, incurs or is liable for (including legal costs on a solicitor and client basis) to the extent it:

(a) arises out of or in connection with the Contractor's breach of any privacy obligations under or pursuant to clause 15.1;

(b) is the result of a claim against the Customer, its officers or employees made by a third party arising out of or in connection with a malicious or negligent act or omission of the Contractor, its directors, officers, employees, agents and subcontractors in the performance of the Contractor's obligations to the Customer under the Customer Contract; or

(c) is the result of a claim against the Customer, its officers or employees made by a third party that the use of the Deliverable in accordance with the Customer Contract infringes any Intellectual Property Rights, including the Moral Rights, of the third party claimant, that are enforceable in Australia (**IP Claim**).

19.2 The Customer must promptly, and in any event within 5 Business Days of being notified of a claim for which it is seeking an indemnity under clause 19.1(b) or 19.1(c), provide the Contractor with Notice in Writing of the details of the claim. The Customer must (unless there is any government policy that prohibits the Contractor from handling the process for the settlement of the claim) permit the Contractor, at the Contractor's expense, to handle the process for the settlement of such claim and, as permitted by law, to control and direct any litigation that may follow a claim under clause 19.1(b) or 19.1(c) (including selecting solicitors and counsel), subject to the Contractor agreeing to comply at all times with the government policy relevant to the conduct of the litigation.

19.3 If the Customer does not permit the Contractor to handle the process for the settlement of such claim under clause 19.2 and, as permitted by law, to control and direct any litigation that may follow a claim under clause 19.1(b) or 19.1(c), then the Customer must promptly and fully defend the claim (whilst complying with government policy), and not settle the claim without the Contractor's prior written consent, such consent not to be unreasonably withheld. The Customer must keep the Contractor fully informed throughout the period of the claim, including providing copies of all relevant documents.

19.4 The Customer must, upon the Contractor confirming its obligations under the indemnity in clause 19.1, provide the Contractor with reasonable assistance in defending, settling or otherwise conducting the negotiations or litigation, at the Contractor's expense, including providing all relevant documents, permitting its Personnel to testify for the Contractor if requested by the Contractor and using any defence that might be available to the person being indemnified.

19.5 Notwithstanding clause 19.1(c), the Contractor is not required to indemnify the Customer, its officers and employees to the extent that the IP Claim is caused by:

(a) any open source software that forms part of the Deliverable;

(b) the combination, operation or use of the Deliverable with any other product, equipment business method, software or data;

(c) any Intellectual Property Rights including Moral Rights, material or thing provided by any person other than the Contractor or its Personnel, including any Customer Supplied Items;

(d) any modification of the Deliverable by any person other than the Contractor or its agents;

(e) the Contractor following the designs, specifications or instructions provided by the Customer or other person on the Customer's behalf; or

(f) the continued use of the Deliverable after the Contractor has provided the Customer a new software version, patch or correction, or a replacement part or other correction that would have overcome the infringement.

19.6 Without prejudice to the Customer's rights under clause 19.1(c), if there is an IP Claim then the Contractor may, with the consent of the Customer, at the Contractor's expense, either:

(a) obtain for the Customer the right to the continued use of the Deliverable in accordance with the Customer Contract;

(b) replace or modify the Deliverable so that the alleged infringement ceases and the replaced or modified Deliverable provides the Customer with substantially similar functionality and performance as required in the Contract Specifications; or

(c) if, in the opinion of the Contractor, neither 19.6(a) nor 19.6(b) is reasonably commercially available and the Customer is not subject to the benefits of the legislation in clause 19.10, the Contractor may terminate the Customer Contract, and will be liable for damages to the Customer for such termination.

19.7 Notwithstanding clause 19.1, the Contractor is not required to indemnify the Customer under clause 19.1(b) or 19.1(c) (as applicable), its officers and employees:

(a) if the third party making a claim under clause 19.1(b) or the IP Claim (as applicable) is the Contract Authority or any other Eligible Customer who is obtaining the benefit of, or being provided with, the Product, Service or Deliverable under the Customer Contract; or

(b) where the third party claim under clause 19.1(b) or the IP Claim arises from, or in connection with, the supply of any Product, Service or Deliverable (or the supply of any item based on any Product, Service or Deliverable) to the third party, whether the supply was made by the Customer or any person who has, directly or indirectly, acquired the Product, Service or Deliverable or item based on the Product, Service or Deliverable from the Customer.

19.8 The Contractor's liability in respect of the indemnity provided under:

(a) clauses 19.1(a), is subject to clauses 18.4, 18.6 and 18.7;

(b) clause 19.1(b), is subject to clauses 18.1 to 18.7;

(c) clause 19.1(c), is subject to clauses 18.4, 18.6 and 18.7.

19.9 The Customer must give the Contractor 10 Business Days' Notice in Writing of an intention to claim a liability, loss or expense in accordance with clause 19.1(a) including in that notice an explanation of how that liability or expense was assessed and the Contractor's proposed share of that liability.

19.10 For the purposes of clause 19.1(c) an infringement of Intellectual Property Rights includes unauthorised acts which would, but for the operation of the Patents Act (Cth) 1990 s.163, the Designs Act (Cth) 2003 ss 96, 100, the Copyright Act (Cth) 1968 s.183 and the Circuits Layout Act 1989 (Cth) s.25, constitute an infringement.

20. Conflict of Interest

20.1 The Contractor must:

(a) provide the Customer with Notice in Writing upon becoming aware of the existence or possibility of a Conflict of Interest that arises in the performance of its obligations under the Customer Contract; and

(b) comply with any direction given by Customer in relation to managing that Conflict of Interest.

21. Performance Management

REPORTING

21.1 The Contractor must provide to the Customer the reports stated in the Order Documents including Item 40 of the General Order Form in the time frame and format agreed in the Order Documents or as reasonably required by the Customer.

22. Government Policy

POLICY

22.1 If there is a Head Agreement and the Contractor was required to provide a competitive quote prior to entering into this Customer Contract, the Contractor must comply with the NSW Government policy known as the "Small and Medium Enterprises ('SME') Policy Framework". The Contractor acknowledges that it has read clause 16 of the Head Agreement which sets out the requirements of the Contractor imposed by the "Small and Medium Enterprises ('SME') Policy Framework " and agrees to comply with those requirements in respect of the competitive quote.

22.2 If there is no Head Agreement and the Customer Contract is a standalone Customer Contract then if the Contractor was required to provide a competitive quote prior to entering into this Customer Contract the Contractor must, during the Contract Period, comply with the NSW Government policy known as "Small and Medium Enterprises ('SME') Policy Framework " in respect of the competitive quote. The Contractor acknowledges that it has read the"Small and Medium Enterprises ('SME') Policy Framework at http://www.procurepoint.nsw.gov.au/procurement-reform/about-nsw-procurement-reform/small-and-medium-enterprises-policy-framework which sets out the requirements of the Contractor imposed by the Small and Medium Enterprises ('SME') Policy Framework.

22.3 The Contractor must comply with the NSW Department of Finance and Services (DFS) Business Ethics Statement (http://www.services.nsw.gov.au/about-us/business-ethics)

23. Contract Administration

REPRESENTATIVES

23.1 Each Party may nominate an employee who is its Authorised Representative in Item 3 or Item 6 of the General Order Form.

23.2 Each Party warrants to the other Party that its Authorised Representative has the authority to provide such consents and approvals as are required for the purposes of this Customer Contract and to issue instructions and directions as necessary for the purposes of this Customer Contract, on behalf of that Party.

NOTICE OF CHANGE OF CONTROL

23.3 The Contractor must promptly provide the Customer with Notice in Writing of any Change in Control, other than a Change of Control that is a solvent re-organisation with shares being transferred between Related Companies.

RECORD KEEPING

23.4 The Contractor must keep financial records and other information relevant to the performance of the Customer Contract including as are required to comply with any applicable Statutory Requirement. The Contractor must give the Customer access to and copies of such records and information (excluding information relating to profit margins) within a reasonable time of a written request from the Customer.

NOTICES

23.5 Any Notice in Writing must be sent to the receiving Party's Service Address addressed to the Party's nominee for receipt of notices, or if no such position is nominated, it must be addressed to the Authorised Representative. A Notice in Writing must not be sent by email.

23.6 Any Notice in Writing is regarded as given and received:

(a) if sent by mail; 3 Business Days after it is posted; and

(b) if sent by fax; at 9.00 am on the Business Day following the day when the addressee actually receives it in full and in legible form.

24. Dispute Resolution

24.1 The Parties agree to resolve any conflicts or issues between them that arise during the Contract Period out of, or in connection with, the Customer Contract in accordance with clause 24.

24.2 If a dispute arises out of, or in connection with the Customer Contract during the Contract Period, then, subject to clause 24.13, the aggrieved Party must submit a Notice in Writing to the other Party of the issue, and if the issue relates to an allegation of breach of contract or any damages the notice must include details of the breach, including the relevant clauses of the agreement which are alleged to have been breached, and (if applicable) the damages claimed and how the damages are calculated (**Issue Notice**). The Issue Notice must be submitted within a reasonable time of the Party becoming aware of the issue. If the Party submitting the Issue Notice is the Contractor, then where the Customer Contract is made under a Head Agreement, the Contractor must send a copy of the Issue Notice to the Contract Authority.

24.3 If a Party submits an Issue Notice under clause 24.2, each Party must nominate in writing, within 7 days, a senior executive who will attempt to resolve the dispute. The nominated senior executives will promptly meet at a time and place that is mutually convenient with the objective of resolving the issue. The nominated senior executives may invite other personnel to attend the mutually convenient conference subject to a list of additional invited personnel being provided to the other nominated senior executive at least 24 hours prior to the conference.

24.4 If the Parties are able to agree upon a resolution to the dispute, the terms of the agreement are to be documented and signed by both nominated senior executives. Such an agreement will be binding on both Parties.

24.5 Each Party will bear its own costs under clauses 24.2 to 24.4.

24.6 If the dispute is not resolved within 21 days of the date that the Issue Notice was received by the other Party, either Party may then refer the dispute to expert determination in accordance with clauses 24.7 to 24.8.

24.7 The Party that requires that the dispute is resolved by expert determination must submit a Notice in Writing to the other Party specifying the issue to be decided by expert determination, and if the issue relates to an allegation of breach of contract or any damages the notice must include details of the breach, including the relevant clauses of the agreement which are alleged to have been breached, and (if applicable) the damages claimed and how the damages are calculated (**Referral Notice**).

24.8 If the dispute is to be resolved by expert determination the Parties will be bound by the provisions and procedures contained in Schedule 11 – Dispute Resolution Procedures, unless agreed otherwise in writing.

24.9 If a Referral Notice has not been submitted within 20 Business Days of becoming entitled under clause 24.6 then the issue is barred from expert determination or any other action or proceedings, subject to clause 24.13. The Customer and the Contractor may, in writing, agree to extend this 20 Business Days period for the purposes of continuing to negotiate a resolution of a particular dispute for up to another 20 Business Days.

24.10 Notwithstanding the existence of a dispute each Party must continue to perform its obligations under the Customer Contract during the period of the attempt to resolve this issue under clauses 24.2 to 24.8.

24.11 Unless the Parties otherwise agree in writing, clauses 24.7 to 24.8 do not apply to disputes for which:

(a) either Party's claim exceeds $250,000 or the amount stated in Item 41 of the General Order Form;

(b) includes any dispute that involves a party claiming that a statutory guarantee under the CCA is involved in the dispute; or

(c) relates to an issue of the type stated in Item 41 of the General Order Form.

In this case if the dispute is not resolved within 15 Business Days of the date that the Issue Notice was received by the other Party, either Party may commence any other form of resolution, including court proceedings.

24.12 The amount specified in Item 41 of the General Order Form shall include the total amount being claimed by both Parties including the amount of any cross claim but excludes any set offs, interest and legal costs. If the Parties are unable to agree on the total amount being claimed each Party shall submit a claim to the other Party detailing the nature of the claim, the relevant term of the Customer Contract which has been breached and how it calculated the amount of its claim. Where only one Party is submitting a claim the other Party shall be entitled to submit its estimate of the amount of the claim to the other Party. If the calculations of each Party differ from one another the amount in dispute for the purposes of Item 41 of the General Order Form shall be calculated by totaling the value of all the claims or estimated amount of the claims together and dividing that amount by the total number of claims and estimated claims.

24.13 The provisions of clauses 24.2 to 24.12 do not apply where a party seeks urgent interlocutory relief or where a Party has terminated the Customer Contract for a Substantial Breach or Fundamental Breach of the Agreement.

25. Termination

25.1 If the Customer Contract is made under a Head Agreement then termination or expiry of the Head Agreement does not affect the Customer Contract, unless the context necessarily requires it.

TERMINATION FOR CAUSE BY THE CUSTOMER

25.2 The Customer may terminate the Customer Contract immediately by providing the Contractor Notice in Writing if:

(a) the Contractor suffers an Insolvency Event; or

(b) the Contractor has committed a Substantial Breach and the Contractor has not either:

(i) rectified that Substantial Breach within 14 days (or such longer period as stated in the Notice in Writing) of receipt of a Notice in Writing specifying the details of the breach; or

(ii) proposed steps that are reasonably acceptable to the Customer that it will take to remedy the Substantial Breach and a timeframe within which the Contractor will take them which are reasonably acceptable to the Customer.

(c) the Contractor fails to comply with the NSW Department of Finance and Services (DFS) Business Ethics Statement (http://www.services.nsw.gov.au/about-us/business-ethics) including failure to:

(i) comply with applicable NSW Government Code of Practice and DFS's procurement policies and procedures,

(ii) provide accurate and reliable advice and information when required,

(iii) declare actual or perceived conflicts of interest as soon as the Contractor become aware of the conflict,

(iv) act ethically, fairly and honestly in all dealings with DFS, the Contract Authority or the Customer,

(v) take all reasonable measures to prevent the disclosure of Confidential Information of DFS, the Contract Authority and the Customer,

(vi) assist DFS, the Contract Authority or the Customer to prevent unethical practices in the business relationship,

or engaging in any form of collusive or unethical practices, including offering staff of DFS, the Contract Authority or the Customer inducements or incentives designed to improperly influence the conduct of their duties.

TERMINATION FOR CONVENIENCE BY THE CUSTOMER

25.3 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience, such termination to be effective immediately unless stated otherwise on the Notice In Writing. The Contractor must immediately comply with any directions given in the Notice in Writing and must do everything that is reasonably practical to mitigate its losses arising in consequence of termination of the Customer Contract under this clause 25.3.

25.4 If the Customer exercises its right under clause 25.3, the Customer must:

(a) indemnify the Contractor against any liabilities or expenses, which are reasonably and properly incurred by the Contractor to the extent that those liabilities or expenses were

incurred as a result of termination of the Customer Contract in accordance with clause 25.3; and

(b) pay any amount that is stated in the Order Documents including Item 42 of the General Order Form.

25.5 Once the Customer has paid the amounts in clause 25.4 no further compensation is payable for any termination under clause 25.3.

TERMINATION FOR CAUSE BY THE CONTRACTOR

25.6 The Contractor may terminate the Customer Contract immediately by providing the Customer Notice in Writing if the Customer has:

(a) not paid any amount that has not been disputed by the Customer in accordance with clause 11.11 by the date that payment was due to be made; and

(i) the Contractor has provided written notice of this failure; and

(ii) the Customer has failed to pay that undisputed amount within 28 days of receipt of the written notice of failure;

(b) committed a Fundamental Breach of the Customer Contract and the Customer has not rectified that Fundamental Breach within 28 days (or such longer period as stated in the Notice in Writing) of receipt of a Notice in Writing from the Contractor specifying the details of the breach;

(c) committed, in respect of its:

(i) privacy obligations under the Customer Contract:

(A) more than one Unremedied Breach; or

(B) more than one breach which is incapable of remedy and, after the first such breach, the Customer has failed to take reasonable appropriate action to mitigate against the recurrence of such a breach;

(ii) obligations of confidentiality under the Customer Contract

(A) more than one Unremedied Breach; or

(B) more than one breach which is incapable of remedy and, after the first such breach, the Customer has failed to take reasonable appropriate action to mitigate against the recurrence of such a breach; or

(iii) obligations as to the Contractor's Intellectual Property Rights under the Customer Contract:

(A) more than one Unremedied Breach; or

(B) more than one breach which is incapable of remedy and, after the first such breach, the Customer has failed to take reasonable appropriate action to mitigate against the recurrence of such a breach;

where, for the purposes of this clause 25.6(c), "**Unremedied Breach**" means a breach which is capable of remedy and which has not been rectified within 28 days (or such longer period as stated in the Notice in Writing) of receipt of a Notice in Writing from the Contractor specifying the details of the breach; or

(d) suffered an Insolvency Event.

CONSEQUENCES OF TERMINATION

25.7 In the event of termination under clause 25.2, the Customer may obtain from any other source a reasonably similar alternative to the Deliverable in which case the Contractor shall, subject to clause 18, be liable to the Customer for any reasonable expenses incurred and any losses sustained (including any price difference between the Deliverable and the similar alternative) by the Customer.

25.8 If the Customer Contract:

(a) is terminated by the Customer for cause or it expires, then the Customer may provide the Contractor with written notice requiring the Contractor at its expense to remove Deliverables or to dismantle or remove work from the Customer's premises by a date stated in that notice;

(b) is terminated by the Contractor for cause, then the Contractor may provide the Customer with written notice requiring the Customer to return any Deliverables that have not been paid for in full, and the Customer must return those Deliverables at its expense by the date stated in that notice; and

(c) such termination or expiry is without prejudice to any right of action or remedy that has accrued or may accrue to either Party.

26. General

VARIATION

26.1 Subject to any other rights given under this Customer Contract to vary its terms and the following provisions of clause 26.2, neither a Change Request nor a Contract Variation shall be valid unless agreed in writing and signed by both the Customer and the Contractor.

26.2 Where the Customer Contract is entered into, the Customer must obtain the written approval of the Director General, NSW Department of Finance and Services prior to agreeing to a variation of any term or condition including a variation to any of the Protected Clauses. In such circumstances, the Contractor must obtain a copy of such written approval from the Customer before entering into the relevant Change Request that varies a term or condition including a Protected Clause.

ASSIGNMENT AND NOVATION

26.3 The Contractor must not assign in whole or in part or novate the Customer Contract without obtaining the prior written consent of the Customer, which consent may be withheld in its discretion.

26.4 The Contractor acknowledges that the Customer may conduct financial and other inquiries or checks on the entity proposing to take over the Customer Contract before determining whether or not to give consent to the assignment or novation.

26.5 The Customer at its own cost, may assign or novate, the Customer Contract, where by operation of statute the Customer is reconstituted into a new legal entity, to that new legal entity. If the assignment or novation changes the scope of the obligations or Deliverables to be provided by a Contractor under a Customer Contract, a Change Request (or Contract Variation, if applicable) must be effected, which will include a variation to the Price to reflect any increased costs that are incurred by the Contractor, or increased benefits that are gained by the Customer (as newly defined), as a result.

26.6 The Customer may, at its own cost, assign or novate the Customer Contract to any other Eligible Customer with the prior written consent of the Contractor, such consent not to be unreasonably delayed or withheld.

WAIVER

26.7 A waiver in respect of a breach of a provision of the Customer Contract by a Party shall not be taken to be a waiver in respect of any other breach. The failure of either Party to enforce any provision of the Customer Contract will not be interpreted as a waiver of that provision.

MATERIAL ADVERSE EVENTS

26.8 The Contractor must provide the Customer with Notice in Writing immediately upon becoming aware of the existence or possibility of a Material Adverse Event.

UNFORESEEN EVENTS

26.9 A Party is excused from performing its obligations to the extent it is prevented by an Event, except an Event that is the subject of a Business Contingency Plan. The Contractor must immediately notify the Customer of the occurrence of the Event when the Contractor becomes aware of it or when the Contractor ought reasonably to be aware of it.

26.10 Each Party must make all reasonable efforts to minimise the effects of the Event. If the affected Party is prevented from performing its obligations under the Customer Contract by the Event for 60 days or such other period agreed in writing, then the other Party may in its discretion immediately terminate the Customer Contract by giving Notice in Writing of termination to the other Party.

26.11 Where the Customer Contract is terminated by the Customer in accordance with clause 26.10:

(a) the Contractor is entitled to payment for work performed in accordance with the Customer Contract up to the date of termination; and

(b) the Parties must otherwise bear their own costs and will be under no further liability to perform the Customer Contract.

SEVERABILITY

26.12 If any part of the Customer Contract is void or voidable, then that part is severed from the Customer Contract without affecting the continued operation of the remainder of the Customer Contract.

ENTIRE AGREEMENT

26.13 To the extent permitted by law:

(a) the Customer Contract constitutes the entire understanding and agreement between the Contractor and the Customer in relation to its subject matter. Any prior representation, arrangement, agreement or undertaking given or received by either Party is superseded and shall have no effect;

(b) the warranties stated in the Customer Contract are the sole warranties provided by the Parties; and

(c) neither Party makes any other warranty, including any implied warranties of merchantability and of fitness for a particular purpose.

RIGHTS ARE CUMULATIVE

26.14 Subject to clause 6.33, the rights and remedies provided under the Customer Contract are cumulative and not exclusive of any rights or remedies provided by law or any other right or remedy.

SURVIVAL

26.15 The provisions of clauses 3.11 to 3.13, 6.42 to 6.44, 8.1 to 8.4, 13.4 to 13.8, 13.12, 13.13, 14.1 to 14.3, 15, 16.3, 18, 19, 25.7, 25.8, 26.15 and 26.17 and any other clause which naturally should survive termination or expiry of the Customer Contract shall survive termination or expiry of the Customer Contract.

COUNTERPARTS

26.16 If there are a number of counterparts of the Customer Contract, the counterparts taken together constitute one and the same instrument.

APPLICABLE LAW

26.17 The laws of the New South Wales govern the Customer Contract and the Parties submit to the exclusive jurisdiction of the courts of New South Wales.

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

By [insert name of Customer's Representative] but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of [insert Contractor's name and ACN/ABN]

Signature of Authorised Signatory

Print name

Date

Schedule 1: General Order Form

CUSTOMER

Item 1 Name of Customer

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Customer's full legal name:	Sydney Trains (ABN 38 284 779 682)

Item 2 Service Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Customer's service/delivery address:	Level 13, 477 Pitt Street, Sydney NSW 2000

Item 3 Customer's Representative

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Representatives (clause 23.1)	
Specify an employee who is the Customer's Authorised Representative:	Stefano Bianchini

CONTRACTOR

Item 4 Name of Contractor

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Contractor's full legal name:	Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Item 5 Service Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Contractor's service/delivery address:	10/14 Ashtan Place, Banyo QLD 4014

Item 6 Contractor's Representative

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Representatives (clause 23.1)	
Specify an employee who is the Contractor's Authorised Representative:	Martin Rampl

Item 7 Head Agreement

This Item 7 must be completed when the Customer Contract is entered into under a Head Agreement.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.1)	
Specify the Head Agreement number:	Not applicable.
Specify the Head Agreement title:	Not applicable.
Specify the Term of the Head Agreement: Start Date: End Date: If the Term of the Head Agreement has expired the Customer must obtain the Contract Authority's approval to enter into a further Customer Contract, and this approval should be attached to this General Order Form.	Not applicable.
Insurance (clause 16.2)	Not applicable.
Specify the insurances required under the Head Agreement:	Not applicable.
The default insurance requirement under the Head Agreement is public liability insurance with an indemnity of at least $10,000,000 in respect of each claim for the period of cover. Specify any higher limit of cover that is required by the Head Agreement:	Not applicable.
The default insurance requirement under the Head Agreement is product liability insurance with an indemnity of at least $10,000,000 for the total aggregate liability for all claims for the period of cover. Specify any higher limit that is required by the Head Agreement:	Not applicable.
Specify if professional indemnity/errors and omissions insurance was required under the Head Agreement. If so, the default insurance requirement is for a limit of cover of $1,000,000 in respect of the total aggregate liability for all claims for the period of cover. Specify any higher limit that is required by the Head Agreement:	Not applicable.
Workers' compensation insurance in accordance with applicable legislation:	Not applicable.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify any other type of insurance required under the Head Agreement and the specified amount:	Not applicable.
Performance Guarantee (clause 17.1)	Not applicable.
Specify if the Contractor was required to provide a Performance Guarantee under the Head Agreement:	Not applicable.

Item 8 Modules that form part of the Customer Contract

Formation (clause 3.8(a))

Indicate, by marking with an X, the Modules that apply

Module 1 – Hardware Acquisition and Installation	☐	Module 11 – Telecommunications Services	☐
Module 2 – Hardware Maintenance and Support Services	☐	Module 12 – Managed Services	☐
Module 3 – Licensed Software	☒	Module 13 – Systems Integration	☐
Module 4 – Development Services	☐	Module 14 –Hosting Services	☐
Module 5 – Software Support Services	☐	Module 15 Satellite Services	☐
Module 6 – Contractor Services	☐		☐
Module 7 – Professional Services	☒		☐
Module 8 – Training Services	☐		☐
Module 9 – Data Migration	☐		☐
Module 10 – X as a Service	☐		

Item 9 Schedules that form part of the Customer Contract in addition to the General Order Form

Formation (clause 3.8(b))

Indicate, by marking with an X, the Schedules that apply

Schedule 1 – General Order Form	Applies	Schedule 7 – Statutory Declaration - Subcontractor	☒
Schedule 2 – Agreement Documents	☒	Schedule 8 – Deed of Confidentiality	☒
Schedule 3 – Service Level Agreement	☐	Schedule 9 – Performance Guarantee	☒
Schedule 4 – Variation Procedures	☒	Schedule 10 – Financial Security	☒
Schedule 5 – Escrow Agreement	☐	Schedule 11 – Dispute Resolution Procedures	☒
Schedule 6 – Deed Poll – Approved Agents	☐	Schedule 12 – Project Implementation and Payment Plan	☒

Item 10 Contract Period

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contract Period (Clause 2.4)	
Specify the Commencement Date if it is not the date when the Customer and the Contractor sign the Customer Contract:	The date the last party executes the Customer Contract and the General Order Form.
Specify the end of the Contract Period:	The Contract Period will commence on the Commencement Date and end on the date on which the Contractor has discharged all of its obligations under this Customer Contract. Subject to the Customer paying the full licence fee for the Licensed Software, the Licence for the Licensed Software is perpetual.
Specify any period of extension of the Contract Period in days/weeks/years:	Not applicable.

Item 11 Common Details

Formation (clause 3.4)			
Product and/or Service	**Price per Unit**	**Quantity**	**Extended Price**
As described in the PIPP set out in Annexure B to the Customer Contract, as updated or varied by the Parties from time to time (**PIPP**).	As specified in the PIPP.	As specified in the PIPP.	As specified in the PIPP.
		Sub-Total:	As specified in the PIPP.
		Delivery Charges:	As specified in the PIPP.
		Any Other Charges:	As specified in the PIPP.
		GST:	As specified in the PIPP.
This is the Contract Price (plus GST)		**Total Amount:**	As specified in the PIPP.

Item 12 Delivery Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Delivery (clause 5.1)	
Specify the address of the Site where delivery is to be made:	As specified in the PIPP.
Specify any delivery instructions:	As specified in the PIPP.
Specify the hours during which delivery may be made to the Site:	As specified in the PIPP.

Item 13 Contract Specifications

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
If the Contract Specifications are the User Documentation leave this Item blank. If the Contract Specifications comprise other documents, list those documents in order of priority:	The Contract Specifications consist of: (a) the requirements for the Deliverables set out in the PIPP; (b) any requirements for the Deliverables set out in the Additional Conditions specified in Annexure A to this Customer Contract (**Additional Conditions**); (c) any documents included and / or referenced in Schedule 2 – Agreement Documents; (d) any other requirement or specification agreed between the Parties in writing; and (e) any documents incorporated by reference, or referred to, in any of the documents detailed above.

Item 14 Payment

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Payment (clauses 11.1 and 11.2)	
Invoicing (clause 11.7 and 11.9)	
Specify the Customer's officer to receive invoices:	Stefano Bianchini.
Specify address to which invoices should be sent:	Level 13, 477 Pitt Street, Sydney NSW 2000.
Specify the number of days from receipt of a Correctly Rendered Invoice that the Customer must make payment. If this Item is not completed, the Customer must pay the Contractor within 30 days from receipt of a Correctly Rendered Invoice.	The default period of 30 days unless otherwise specified in the PIPP.
Specify when the Contract Price must be paid: E.g. if the earlier Price is to be paid on delivery, insert "The Contract Price is due on delivery". If payment is to be made on more than one occasion then consider using a PIPP under Item 20.	As specified in the PIPP.
Specify whether the Contract Price is fixed: E.g. does the unit Price per item vary for inflation or other factors? If so, specify the calculation for Price variations:	The Contract Price is fixed.

Item 15 User Documentation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
User Documentation (clause 5.4(b))	
Specify the Price of any additional copies of the User Documentation:	Nil.

Item 16 Management Committee

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Management Committee (clause 6.4)	
List the name/s of the Contractor's project manager, officers or other relevant persons who will sit on the management committee:	As specified in the PIPP, the initial Contractor's representatives on the Management Committee are: (a) Martin Rampl; and (b) Christian Dorner.
Management Committee (clause 6.6)	
Specify the function to be performed by the management committee:	The additional functions of the management committee and the times at which the management committee must meet, are specified in the PIPP.
List the name/s of the Customer's project manager, officers or other relevant persons who will sit on the management committee:	The Customer's representatives are as specified in the PIPP. The initial Customer's representatives on the Management Committee are: (a) Mark Pigot; (b) Stefano Bianchini; (c) Bob Allum; and (d) Reuben Bowd.
Management Committee (clause 6.8)	
Specify the details, including the contents of the progress report to be submitted to the Customer's project manager:	As specified in the PIPP.
Specify any other details:	As specified in the PIPP.

Item 17 Performance Review Procedures

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Performance Reviews (clause 6.10)	
Specify if a service and performance review/s of the Contractor's performance of the Customer Contract is to apply:	No service and performance review/s of the Contractor's performance apply.
Specify any specific time intervals for service and performance reviews:	Not applicable.

Item 18 Site Preparation and Maintenance

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Site Specifications (clause 6.12)	
Specify if a Site Specification is required:	No. A Site Specification is not required.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Access to Customer's Site (clause 7.1(b))	
Specify any other requirements in relation to the Site access:	None.
Specify any requirements for the preparation and maintenance of the Site:	None.

Item 19 Implementation Planning Study

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Implementation Planning Study (clause 6.14)	
Specify if the Contractor must provide an implementation planning study:	No. An Implementation Planning Study is not required.
Specify the implementation planning study objectives and time for provision of study:	Not applicable.
Date for delivery of the implementation planning study to the Customer:	Not applicable.
Specify if the implementation planning study need to undergo Acceptance Tests in accordance with clause 10.1(b):	Not applicable.

Item 20 Project Implementation and Payment Plan (PIPP) and Staged Implementation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Project Schedule (clause 6.17)	
Invoicing (clause 11.7)	
Specify if a PIPP has been created. If so, identify the document in this Item and attach as an Annex to this General Order Form: E.g. the PIPP is in a document "PIPP v1_1 27/10/11" and Annexure 1 to the Customer Contract.	Yes. The PIPP is set out in Annexure B to the Customer Contract.
Staged Implementation (clause 6.20)	
Specify if there is to be Staged Implementation: If so, details of the Deliverables that comprise each Stage must be stated in the PIPP together with the period during which the Customer must give written notice to move to the next Stage (if greater than 10 Business Days):	As specified in the PIPP.

Item 21 Liquidated Damages

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Liquidated Damages (clause 6.28 to 6.34)	
Specify if Liquidated Damages (LDs) will apply:	No.
Specify the Milestones which are LD Obligations:	Not applicable.
Specify the Due Date for completion of each LD Obligation:	Not applicable.
Specify the calculation and amount of LDs for each LD obligation:	Not applicable.
Specify the maximum number of days LDs are to be paid for each LD obligation:	Not applicable.

Item 22 Customer Supplied Items (CSI) and Customer Assistance

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Customer Supplied Items (CSI) (clause 6.36)	
Specify each CSI to be provided by the Customer: CSI may be: office access, desks etc (specify location, standards, times of access); Hardware or software (specify equipment, capacity, versions of software and dates of availability); VPN access or other remote access (specify capacity and hours available). [Note: details of any Customer Personnel should be specified in Item 26].	As specified in the PIPP.
Specify if any CSI must be covered by support and maintenance contracts including the period of cover, the Contractors rights of access to any third party support help desk, the hours and service levels to which support and maintenance must be available to the Contractor:	No.
Specify the times when each CSI is to be provided:	As specified in the PIPP.
Specify any requirements to attach to any CSI: E.g. any standards that the CSI must meet.	Not applicable.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify if the Contractor must conduct any verification checks of CSI's to ensure they are satisfactory:	As specified in the PIPP.
If so, specify the verification check process for each CSI: Include: • a process to manage satisfactory and unsatisfactory verification checks; • a process to manage 'reissued' CSI's: • a process to manage repeat CSI verification checks: • a process to manage 'draft' or 'incomplete' and 'updated' CSI's; • a process to manage rejected CSI's: • a process to manage previously satisfactory CSI which becomes defective: • a list of required verification check forms and/or registers and a corresponding data entry process: • a list of Customer and Contractor nominee/s for responsibility to undertake verification checks:	As specified in the PIPP
Specify any amount payable by the Contractor to the Customer for any item of CSI:	Nil.
Customer Assistance (clause 6.41)	
Specify the instructions, information, data, documents, specifications, plans, drawings and other materials that must be provided by the Customer to the Contractor:	As specified in the PIPP.

Item 23 Escrow

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Escrow (clause 6.42)	
Specify if an escrow arrangement is required:	No. Escrow arrangements are not required.
Specify the parties to the escrow arrangement:	Not applicable.
Specify the time for the escrow arrangement to endure:	Not applicable.

Item 24 Business Contingency Plan

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Business Contingency (clause 6.45)	
Specify if a Business Contingency Plan is required:	No. A Business Contingency Plan is not required.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify when the Business Contingency Plan is required:	Not applicable.
Specify any information to be included in the Business Contingency Plan including the business contingency services required and the period of the services:	Not applicable.
Specify the periods that the Business Contingency Plan must be reviewed, updated by the Contractor:	Not applicable.
Specify the time periods that the Contractor is to test the operability of the Business Contingency Plan:	Not applicable.

Item 25 Secrecy and Security

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Access to Customer's Site (clause 7.4)	
Specify any secrecy or security requirements that the Contractor and its Personnel must comply with: E.g. insert a reference to any document that includes a security requirement.	The Contractor must comply with, and must ensure that each of the Contractor's Personnel comply with: (a) the Customer's confidentiality and system security policy and procedures and execute a deed of confidentiality in a form acceptable to the Customer; (b) the Customer's Code of Conduct; (c) the Customer's internet usage policy and procedures; (d) the Customer's site access sign-in process specified by the Customer when accessing a Site; (e) the Customer's site access sign-out process when leaving a Site; and (f) with all other reasonable requirements specified by the Customer.

Item 26 Customer's Personnel

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Personnel General (clause 8.5)	
Specify the Customer's Personnel who will be available to work with the Contractor and their roles and responsibilities: Also specify the times and duration of their involvement as well as their authority levels:	As specified in the PIPP.

Item 27 Specified Personnel

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specified Personnel (clause 8.8)	
Specify the identity and roles and responsibilities of any of the Contractor's	Details of the Contractor's Specified Personnel are specified in the PIPP.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specified Personnel:	

Item 28 Subcontractors

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Agents and Subcontractors (clause 8.17)	
Specify which subcontractors are required to provide a Statutory Declaration by Subcontractor, substantially in the form of Schedule 7:	The Contractor must obtain a statutory declaration for the Subcontractor where required by the Customer or otherwise where that statutory declaration is a condition of the Customer's approval of a subcontract under clause 8.14.

Item 29 Quality Standard Accreditation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contractor Warranties (clause 9.1(h))	
Specify any quality standard accreditation arrangements the Contractor must hold during the Contract Period:	The Contactor must maintain accreditation that it is compliant with the following standards: (a) Quality Management System Guideline 2006; (b) AS/NZS ISO 9001:2008 standard or an approved equivalent standard as applicable to the Deliverables; and (c) any other standards specified in the PIPP.

Item 30 Contractor's Compliance with Standards, Codes and Laws

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contractor Warranties (clause 9.1(g))	
Specify any laws (other than Statutory Requirements) the Contractor is to comply with:	Any statute, regulation, by-law, ordinance or subordinate legislation in force from time to time in any jurisdiction other than Australia (including any industry codes of conduct) that are applicable to the Deliverables, the Customer or the Contractor.
Specify any codes, policies, guidelines or standards the Contractor is to comply with:	The Customer's policies, standards and procedures as notified to the Contractor from time to time.

Item 31 Customer's Compliance with Standards, Codes and Laws

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Customer Warranties (clause 9.3(h))	
Specify any laws (other than Statutory Requirements) the Customer is to comply with:	The licence granted under clause 13.7 must be granted on terms which are the same as the terms of the additional licence rights specified in clause 11.2 of the Additional Conditions.
Specify any codes, policies, guidelines or	None.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
standards the Customer is to comply with:	

Item 32 Acceptance Testing

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Part 3 Dictionary (clauses 1.2 to 1.4)	
Acceptance Test Notification Period is the period from the end of the Acceptance Test Period, within which the Customer must provide to the Contractor written notice of the result of the Acceptance Test. Specify this period: If no period is specified, the period is 2 Business Days:	Not applicable.
Acceptance Test Data is the data that is provided by the Customer, and agreed by the Contractor that reflects the data the Customer will use in the Deliverable, that is to be used for Acceptance Testing. Specify the Acceptance Test Data:	Not applicable.
Acceptance Test Period is the period for the performance of any Acceptance Tests for any Deliverable. Specify this period: If no period is specified, the period is 10 Business Days from the date of delivery of the Deliverable to the Customer.	Not applicable.
Acceptance (clause 10.1)	
For each Deliverable, specify whether each Deliverable is to undergo Acceptance Testing: If not, the Deliverable will be Accepted under clause 10.1(a).	No Deliverables will be subject to Acceptance Testing.
If a Deliverable is not to undergo Acceptance Tests, specify the period required following delivery of the Deliverable as required by the Order Documents when the Actual Acceptance Date (AAD) for a Deliverable occurs: If no period is specified, then the period is 2 Business Days.	For Deliverables that are Documents, as specified in clause 5.3 of the Additional Conditions. For all other Deliverables, 10 Business Days after those Deliverables were supplied.
Conducting Acceptance Tests (clause 10.3)	
For each Deliverable that is to undergo Acceptance Tests, specify details of the Acceptance Testing requirements:	Not applicable.
Specify the identification of the Deliverables or part of the Deliverables to be tested:	Not applicable.
Specify the allocation of each Party's responsibilities in relation to testing, including the Party responsible for	Not applicable.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
conducting the Acceptance Tests:	
Specify which Party is to provide the test environment, including hardware, software, power, consumables and other resources and when the environment and resources must be ready for use:	Not applicable.
Specify the methodology and process for conducting Acceptance Tests:	Not applicable.
Specify the scheduling of Acceptance Tests including the Acceptance Test Period and the Acceptance Test Notification Period:	Not applicable.
Specify the Acceptance Criteria used to test whether the Deliverable meets the Contract Specification and other requirements of the Customer Contract:	Not applicable.
Specify the Acceptance Test Data required:	Not applicable.
If an Acceptance Test document has been created that addresses the above points it can be attached to the General Order Form by identifying the document here:	Not applicable.

Item 33 Credit/Debit Card

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Payment (clause 11.3)	
Specify any credit/ debit card or electronic facility that the Customer may use to pay the Contractor:	As specified in the PIPP.
Specify any fee that is applicable for payment by credit/debit card	None.

Item 34 Intellectual Property

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Existing Material (clauses 13.7 and 13.9)	
Specify any terms and condition applicable for granting a license for Existing Material owned by a third party:	The licence granted under clause 13.7 must be granted on terms which are the same as the terms of the additional licence rights specified in clause 12.2 of the Additional Conditions.
Specify any fees to be charged for any license to use any of Contractor's Existing Materials:	Nil.
Customer Owned New Material (clause 13.10)	
Specify if clause 13.10 applies, and if so, to which items of New Material:	Clause 13.10 applies to all New Material. The Contractor must only exercise its rights under clause

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
	13.10(b): (a) for the purpose of supplying the Deliverables to the Customer; and (b) to fulfil its obligations under the Customer Contract, unless otherwise agreed by the Customer in writing.

Item 35 Confidentiality

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Confidentiality (clause 14.1)	
Specify if the Contractor must arrange for its Subcontractors to execute a Deed of Confidentiality substantially in the form of Schedule 8 – Deed of Confidentiality:	Yes. The Contractor must arrange for its Subcontractors to execute Deed of Confidentiality substantially in the form of Schedule 8.

Item 36 Insurance Requirements

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Insurance (clause 16.7)	
Level of indemnity of public liability insurance in respect of each claim for the period of cover. The default requirement in the Customer Contract is $10,000,000 [Only specify if a higher limit of cover that is required by the Customer Contract:]	The level of public liability insurance is $20,000,000.00 in respect of each claim and $50,000,000 in the annual aggregate.
Level of indemnity of product liability insurance for the total aggregate liability for all claims for the period of cover. The default requirement in the Customer Contract is $10,000,000 [Only specify if any higher limit of cover that is required by the Customer Contract:]	At least $20,000,000.00 for the total aggregate liability for all claims and in the annual aggregate
If Services are being provided under the Customer Contract the default level of indemnity of professional indemnity insurance for the total aggregate liability for all claims for the period of cover is $1,000,000 [Only specify is a higher limit that is required by the Customer Contract:]	At least $10,000,000 for the total aggregate liability for all claims.
Specify any additional insurance that the Contractor is to hold, including the type of insurance, the term of the insurance and the amount of the insurance:	(a) Workers compensation insurance **Cover:** Liability for death of or injury (including occupations disease) to all workers performing the Services and Deliverables as required by *Workers Compensation Act 1987* (NSW). **Extension:** To be extended to cover the Principal's statutory liability to such workers, where permitted by *Workers Compensation Act 1987* (NSW). **Period required:** Before commencing the Services and Deliverables until the Contract Period expires.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
	(b) Motor vehicle insurance – third party property **Cover:** All motor vehicles, trailers and mobile plant (whether registered or unregistered) used in connection with the Project. **Period required:** Before commencing the Services until the Service Term expires and, after that, whenever Services are performed.

Item 37 Performance Guarantee

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Performance Guarantee (clause 17.2)	
Specify if the Contractor must arrange for a guarantor to enter into a Performance Guarantee:	Yes. The Contractor must provide a Performance Guarantee from Frequentis AG. The Performance Guarantee will be in the form set out in Schedule 9 of the General Order Form except that the Parties have agreed to delete clause 5(b) of that template.
Specify the date by which the Performance Guarantee must be provided to the Customer. If no date is specified the Contractor must provide the Performance Guarantee to the Customer within 30 days of the Commencement Date.	Within 10 Business Days after the Commencement Date.

Item 38 Financial Security

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Financial Security (clause 17.4)	
Specify if the Contractor must provide a Financial Security: If so, specify the amount of the Financial Security:	Yes. The Contractor must provide a Financial Security to the value of [redacted]
Specify the date by which the Financial Security must be provided to the Customer: If no date is specified, the Contractor must provide the Financial Security within 14 days of the Commencement Date.	Within 10 Business Days after the Commencement Date.

Item 39 Limitation of Liability

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Limitation of Liability (clause 18)	
If the Parties cannot agree the amount that is legally payable under the Customer Contract for the: • Non-Recurring Service or Product; and/or • Short Term Recurring Service (as applicable) insert the amount that the	The Parties have agreed the Contract Value. This is set out in the PIPP.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Parties agree is the best estimate of the Contract Value for the relevant item (the Estimated Contract Price). Note: It may be necessary to separately identity the amounts payable under a single Customer Contract into separate amounts that are attributable to each of the different types of Product/ Service. **(See the definition of Contract Value in Part 3)**	
If Services are being provided under any of the following Modules: Module 6 – IT Personnel; Module 7 – Professional Services; Module 8 – Data Management; Module 11 – Web Services; Module 16 - Project Management Services; Module 17 - Change Management Services; Module 18 - Knowledge Transfer Services; or Module 20 - Whole of Government Requirements specify whether the Parties regard the relevant Services as being: • the supply of a service of the same type on a periodic basis, and so are to be classified as Recurring Services for the purpose of the limitation of liability; or • provided in respect of a specific project where the Contractor has been engaged by a Customer to produce, create or deliver a specified outcome or solution that may be subject to Acceptance Testing, in which case the Services are to be classified as Non-Recurring Services for the purpose of the limitation of liability. **(See definition of Non-Recurring Services and Recurring Services in Part 3)**	The Services are Non-Recurring Services and accordingly the Contractor's liability is limited to 2 times the Contract Value (as specified in the PIPP) for those Non-Recurring Services in accordance with clause 18.1(b)(i) of the Customer Contract.
Specify the alternative cap of liability (clause 18.3):	Not applicable.

Item 40 Performance Management Reports

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Reporting (clause 21.1)	
Specify the reports required, (if any), the time for provision and the agreed format:	As specified in the PIPP.

Item 41 Dispute Resolution

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Dispute Resolution (clause 24.11)	
Specify the threshold amount in AU$ for issues to be resolved by expert determination under clauses 24.7 to 24.8.	$50,000.00
Specify type of issue/s not to be determined by expert determination under clauses 24.7 to 24.8.	Subject to clause 24.11(a), all disputes arising out of or in connection with the Customer Contract are to be determined by expert determination under clauses 24.7 to 24.8.

Item 42 Termination for Convenience

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Termination for Convenience by the Customer (clause 25.4)	
Specify whether an amount is payable under clause 25.4(b) if the Customer exercises its right of termination for convenience under clause 25.3:	The Customer will not have any liability to the Contractor for any termination under clause 25.3, other than the payment of the following: (a) the direct costs incurred by the Contractor for demobilising its own employees; (b) any costs payable to any subcontractor as a result of the termination; and (c) the balance of the cost of the Licensed Software in accordance with section 12.2.5 of the PIPP. Clause 15.1 of the Additional Conditions will apply to any costs that are recoverable under clause 25.4(b).

Item 43 Additional Conditions

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify any Additional Conditions: Note: where the Customer Contract is made under a Head Agreement the Customer must obtain the Contract Authority's and the Director General's NSW Department of Finance and Services consent where an Additional Condition varies a Protected Clause.	Yes. The Additional Conditions are set out in Annexure A to the Customer Contract.

This General Order Form is part of the Customer Contract and incorporates all Parts, terms and conditions and other documents listed in clause 3.8 of Part 2 as if repeated in full in this General Order Form.

SIGNED AS AN AGREEMENT

Signed for and on behalf of Sydney Trains (ABN 38 284 779 682)

By [*to be inserted by the Customer*] but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

Schedule 2 : Agreement Documents

Itemise all documentation (including any supplemental terms and conditions agreed to by the Customer, accepted tenders, offers or quotes from the Contractor, and any letter of acceptance or award issued by the Customer) between the Customer and the Contractor. All such documentation must be itemised in this Schedule 2 and listed below in descending date order (i.e. the latest document is listed first.)

Document	Date of Document
High Level Solution Design Deliverables Acceptance Notice	20140417
MS Interfaces Rev 2.3	20150303
REM ER Diagram V32000 20150122 8	20150303
Implementation Strategy Frequentis R20 V10	20150310
PMP R10 V10	20150310
Extended Product Capabilities R20 V10	20150320
High Level Solution Design R20 V10	20150320
IMS Interfaces 2014 00754 R20 V10	20150320
IMS OptionPaper Comms 2014 00754 R20 V10	20150320
IMS OptionPaper UserInterface 2014 00754 R20 V10	20150320
PMP 2014 00754 R20 V10	20150320
REM Masterdata 2014 00754 R20 V10	20150320
REM Roles User Cases 2014 00754 R20 V10	20150320
Support Plan 2014 00754 R20 V10	20150320
Training Plan REM 2014 00754 R10 V10	20150320
Frequentis Clarification and Defects List 2014 00754 R20 V10	20150323
Frequentis Response to Rail Operations Centre (ROC) Technology Solution Request For Proposal No WS178494	20140825
Rail Operations Centre (ROC) Technology Solution Request For Proposal No WS178494	20140707

Schedule 3: Service Level Agreement

Not applicable

Schedule 4: Variation Procedures

1. Procedures

1.1 Each request or recommendation for a change to the PIPP or any part of the Customer Contract must be submitted in a form substantially similar to the Change Request form attached to this Schedule.

1.2 For each draft Change Request submitted:

(a) the Customer must allocate it with a sequential number;

(b) the draft Change Request must be logged and its progress documented by recording its status from time to time by the Contractor as follows:

(i) requested;

(ii) under evaluation;

(iii) awaiting authorisation;

(iv) cancelled;

(v) pending;

(vi) approved/authorised;

(vii) expired;

(viii) in progress;

(ix) applied;

(x) delivered;

(xi) accepted.

1.3 The Party receiving the draft Change Request must within 5 Business Days of receipt (or such longer period set out in the Change Request):

(a) request further information;

(b) provide written notification to the other Party of its approval or rejection of the Change Request.

1.4 If the Customer submits a draft Change Request to the Contractor, and the Contractor believes that there is more than 1 Business Day's work involved in the evaluation of the Change Request, then prior to commencing work on evaluating the draft Change Request the Contractor may request that the Customer pays for the work involved to evaluate the draft Change Request. The Customer may then either revise the draft Change Request to require less than 1 Business Day's work to evaluate it, or agree to pay for the Contractor's work to evaluate the Change Request in an amount agreed by the Parties, or in absence of agreement, at the Contractor's then current commercial rates.

1.5 If the Customer Contract has been entered into under a Head Agreement, and the Change Request seeks to vary a Protected Clause and the Customer approves of the Change Request, the Customer must submit the Change Request to the Contract Authority and the Director General, NSW Department of Finance and Services, for approval immediately after it has notified the Contractor that it approves the Change Request.

2. Status

2.1 A Change Request is binding on the Parties only when both Parties have signed it. Once signed by both parties the Change Request updates the Customer Contract in accordance with the terms of the Change Request. The Contractor must not implement any draft Change Request until the Customer has signed the Change Request form.

3. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number		*Insert Change Request Number (supplied by the Customer)*
Date of Change Request		*Insert date of draft Change Request*
Originator of need for Change Request		*Customer or Contractor*
Proposed Implementation Date of Change		*Insert proposed date of implementation*
Date of expiry of validity of Change Request		*Insert validity expiry date. The Change Request is invalid after this date.*
Contractor's estimated time and cost of evaluation		*Insert estimated time and cost of evaluation*
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**		*Insert amount to be paid to the Contractor for evaluating the draft Change Request*

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**
Insert date	*Insert version*	*Insert status/reason*	*Insert author*

DETAILS OF CHANGE REQUEST

Summary

[Insert a summary of the changes, if required]

SCOPE

[Insert changes to the scope of Products to be provided and/or any Services, including any extensions to the Contract Period.]

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

[Insert any changes to the Contract Specification]

EFFECT OF CHANGE ON PROJECT TIMETABLE

[Insert changes to the project timetable]

New PIPP (annexed)

[Annex new PIPP if required]

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

[Insert new charges and the timing of payment into the new PIPP]

CHANGES TO CSI

[Insert any changes to the CSI]

CHANGES TO CUSTOMER PERSONNEL

[Insert any changes to the Customer's Personnel]

CHANGES TO CUSTOMER ASSISTANCE

[Insert any changes to the Customer's Assistance]

PLAN FOR IMPLEMENTING THE CHANGE

[insert the plan for implementing the change – if any.]

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

[Insert the responsibilities of the respective Parties for implementing the change – if any.]

Responsibilities of the Contractor

[Insert the responsibilities of the Contractor for implementing the change – if any.]

Responsibilities of the Customer

[insert the responsibilities of the Customer for implementing the change – if any.]

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

[Insert if there will be any effect on the Acceptance Testing of any Deliverable – or alternatively insert None.]

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

[Insert if there will be any effect on performance of any Deliverable – or alternatively insert None.]

EFFECT ON USERS OF THE SYSTEM/SOLUTION

[Insert if there will be any effect on users of the system/solution – or alternatively insert None.]

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Changes will be required to the following documents:

[Add any other documents which may be affected.]

EFFECT ON TRAINING

Insert if there will an effect on training or alternatively insert None.]

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

[insert if there are any other matters.]

ASSUMPTIONS

The plan for implementing the changes outlined in this Change Request is based on the assumptions listed below:

[Insert any assumptions. If none then this section will be deleted].

If the assumptions are or become untrue, the Parties will address the effect of this through a subsequent Change Request.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

[Insert a list of the documents that form part of this Change Request]

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

[Insert amendments to clauses in the Customer Contract, relevant Schedules including Service Level Agreement]

Note that variations to any of the Protected Clauses require the Customer to obtain the Contract Authority's and the Director General, NSW Department of Finance and Services approval (clause 26.2))

AUTHORISATION

The Contractor must not commence work on the Change Request until is signed by both Parties. Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative*] but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

Schedule 5: Escrow Deed

Not applicable

Schedule 6 : Deed Poll – Approved Agents

Not applicable

Schedule 7: Statutory Declaration – Subcontractor

Oaths Act (NSW), 1900 Ninth Schedule

I, _____ do solemnly and sincerely declare that to the best of my knowledge and belief:

1. CNS - Solutions & Support GmbH (**Subcontractor**) has been selected as subcontractor to, Frequentis Australasia Pty Ltd ABN 25 107 550 489 (**Contractor**) under an agreement between the Sydney Trains (ABN 38 284 779 682) (**Customer**) and the Contractor dated [*insert date of Customer Contract*].

2. The Subcontractor will offer to enter into an agreement with the Contractor in connection with the Customer Contract on terms that are not inconsistent with the terms of the Customer Contract in so far as those terms are relevant to the Subcontractor.

3. As at the date of this Statutory Declaration there are no reasons of which I am aware that would prevent the Subcontractor's agreement with the Contractor from being performed in a manner that would allow the satisfactory and timely performance of that subcontract.

And I make this solemn declaration, as to the matter aforesaid according to the law in this behalf made, and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Declared at _____

the _____ day of _____ 20 _____

Before me, _____

Schedule 8: Deed of Confidentiality

Deed of Agreement dated the _____ day of _____ 20 _____

Between Sydney Trains (ABN 38 284 779 682) (**Customer**)

And CNS - Solutions & Support GmbH (**Subcontractor**)

RECITALS

(A) In the course of the Subcontractor assisting in the supply by the Contractor of certain Deliverables for the Customer under a subcontract agreement between the Subcontractor and the Contractor, the Subcontractor will have access to, and may become aware of, Confidential Information belonging to, or in the possession of, the Customer.

(B) Improper use or disclosure of the Confidential Information would severely damage the Customer's ability to perform its governmental/statutory functions and would severely damage the commercial interests of the Customer.

(C) The Customer requires, and the Subcontractor agrees, that it is necessary to take all reasonable steps (including the execution of this Deed) to ensure that the Customer's Confidential Information is kept confidential.

(D) This Deed sets out the terms on which the Subcontractor will have access to the Confidential Information.

WHAT IS AGREED

1. Recitals

The Parties acknowledge the truth and accuracy of the Recitals.

2. Interpretation

DEFINITIONS

2.1 In the interpretation of this Deed unless a contrary intention appears the following expressions will have the following meanings:

Agreement means the Customer Contract entered into under the *Procure IT Framework* between the Contractor and the Customer under which the Contractor will supply Deliverables to the Customer dated [insert date].

Business Day means any day that is not a Saturday, Sunday or a public holiday in New South Wales.

Confidential Information means information that:

(a) is by its nature confidential; or

(b) is communicated by the Customer to the Subcontractor as confidential; or

(c) the Subcontractor knows or ought to know is confidential; or

(d) relates to:

(i) the Products and Services;

(ii) the financial, the corporate and the commercial information of the Customer;

(iii) the affairs of a third party (provided the information is non-public); and

(iv) the strategies, practices and procedures of the State and any information in the Subcontractor's possession relating to the State public service,

but excludes any information which the Subcontractor can establish was:

(v) in the public domain, unless it came into the public domain due to a breach of confidentiality by the Subcontractor or another person;

(vi) independently developed by the Subcontractor; or

(vii) in the possession of the Subcontractor without breach of confidentiality by the confidant or other person.

Contractor means Frequentis Australasia Pty Ltd (ABN 25 107 550 489).

Deliverables means any product or service and any associated material offered for supply or provided by the Contractor in accordance in the Agreement.

Express Purpose means the Subcontractor performing the obligations under its subcontract agreement with the Contractor.

Intellectual Property Rights means all intellectual property rights including:

(a) copyright, patent, trademark, design, semi-conductor or circuit layout rights, registered design, trademarks or trade name and other protected rights, or related rights, existing worldwide; and

(b) any licence, consent, application or right, to use or grant the use of, or apply for the registration of, any of the rights referred to in (a),

but does not include the right to keep confidential information confidential, moral rights, business names, company names or domain names.

Notice means notice in writing given in accordance with this Deed.

State means the State of New South Wales.

GENERAL

2.2 Headings are for convenience only, and do not affect interpretation. The following rules also apply in interpreting this Deed, except where the context makes it clear that a rule is not intended to apply

2.3 A reference to:

(a) legislation (including subordinate legislation) is a reference to that legislation as amended, re-enacted or replaced ,and includes any subordinate legislation issued under it;

(b) a document or agreement, or a provision of a document or agreement, is a reference to that document, agreement or provision as amended, supplemented, replaced or novated;

(c) a person includes any type of entity or body of persons whether or not it is incorporated or has a separate legal entity;

(d) anything (including a right, obligation or concept) includes each part of it.

2.4 If this Deed expressly or impliedly binds more than one person then it shall bind each such person separately and all such persons jointly.

2.5 A singular word includes the plural, and vice versa.

2.6 A word which suggests one gender includes the other gender.

2.7 The words “include(s)” and “including” are not words of limitation.

2.8 If a word is defined, another part of speech of that word has a corresponding meaning.

3. Non disclosure

3.1 The Subcontractor must not disclose the Confidential Information to any person without the prior written consent of the Customer.

3.2 The Customer may grant or withhold its consent in its discretion.

3.3 If the Customer grants its consent, it may impose conditions on that consent, including a condition that the Subcontractor procures the execution of a Deed in these terms by the person to whom the Subcontractor proposes to disclose the Confidential Information.

3.4 If the Customer grants consent subject to conditions, the Subcontractor must comply with those conditions.

3.5 Despite clause 3.1, the Subcontractor may disclose the Confidential Information:

(a) to its directors, officers, employees and contractors;

(b) to the Contractor and its directors, officers, employees and the Contractor’s other contractors who are engaged in the supply of the Deliverables and their directors, officers, employees,

each referred to as **permitted recipients**, where such disclosure is essential to carrying out their duties in respect of the Express Purpose.

3.6 Despite clause 3.1, the Subcontractor may disclose the Confidential Information:

(a) to its lawyers, accountants, insurers, financiers and other professional advisers where the disclosure is in connection with advising on, reporting on, or facilitating the performance under this Deed; or

(b) if the Subcontractor is required to disclose by law, order of a court or tribunal of competent jurisdiction or the listing rules of an applicable securities exchange.

3.7 Before disclosing the Confidential Information to a permitted recipient, the Subcontractor will ensure that the permitted recipient is aware of the confidentiality requirements of this Deed and is advised that it is strictly forbidden from disclosing the Confidential Information or from using the confidential information other than as permitted by this Deed.

3.8 The Confidential Information must not be copied or reproduced by the Subcontractor or the permitted recipients without the expressed prior written permission of the Customer, except as for such copies as may be reasonably required for the Express Purpose.

3.9 If any person, being any director, officer, contractor or employee of the Subcontractor, who has had access to the Confidential Information in accordance with this clause 3 leaves the service or employ of the Subcontractor then the Subcontractor will procure that that person does not do or permit to be done anything which, if done or permitted to be done by the Subcontractor, would be a breach of the obligations of the Subcontractor under this Deed.

4. Restriction on use

4.1 The Subcontractor must use the Confidential Information only for the Express Purpose and must not without the prior written consent of the Customer use the Confidential Information for any purpose other than the Express Purpose.

4.2 The Subcontractor must, unless otherwise authorised by the prior written consent of the Customer:

(a) treat as confidential and secret all of the Confidential Information which the Subcontractor has already acquired or will acquire from the Customer;

(b) take proper and adequate precautions at all times and enforce such precautions to preserve the confidentiality of the Confidential Information and take all necessary action to prevent any person obtaining access to the Confidential Information other than in accordance with this Deed;

(c) not directly or indirectly use, disclose, publish or communicate or permit the use disclosure, publication or communication of the Confidential Information to any person other than in accordance with this Deed;

(d) not copy or disclose to any person in any manner any of the Confidential Information other than in accordance with this Deed; and

(e) ensure that the permitted recipients comply with the terms of this Deed and keep the Confidential Information confidential and not use or disclose the Confidential Information other than as permitted by this Deed.

5. Survival

5.1 This Deed will survive the termination or expiry of the Agreement for a period of 6 years.

6. Rights of the Customer

PRODUCTION OF DOCUMENTS

6.1 The Customer may demand the delivery up to the Customer of all documents in the possession or control of the Subcontractor containing the Confidential Information.

6.2 The Subcontractor must immediately comply with a demand under this clause 6.

6.3 If the Customer makes a demand under this clause 6, and documents containing the Confidential Information are beyond the Subcontractor's possession or control, then the Subcontractor must provide full particulars of the whereabouts of the documents containing the Confidential Information, and the identity of the person in whose possession or control they lie.

6.4 In this clause 6, "documents" includes any form of storage of information, whether visible to the eye or not.

LEGAL PROCEEDINGS

6.5 The Customer may take legal proceedings against the Subcontractor or third parties if there is any actual, threatened or suspected breach of this Deed, including proceedings for an injunction to restrain such breach.

7. Indemnity and release

7.1 The Subcontractor is liable for, and agrees to indemnify and keep indemnified the Customer in respect of, any claim, damage, loss, liability, cost, expense, or payment which the Customer suffers or incurs as a result of:

(a) a breach of this Deed (including a breach of this Deed which results in the infringement of the rights of any third party); or

(b) the disclosure or use of the Confidential Information by the Subcontractor or the permitted recipients other than in accordance with this Deed.

8. No exclusion of law or equity

This Deed does not exclude the operation of any principle of law or equity intended to protect and preserve the confidentiality of the Confidential Information.

9. Waiver

9.1 No waiver by the Customer of one breach of any obligation or provision of this Deed will operate as a waiver of another breach of any other obligation or provision of this Deed.

9.2 None of the provisions of this Deed will be taken to have been varied waived discharged or released by the Customer unless by its express consent in writing.

10. Remedies cumulative

CUMULATIVE

10.1 The rights and remedies provided under this Deed are cumulative and not exclusive of any other rights or remedies.

OTHER INSTRUMENTS

10.2 Subject to the other covenants of this Deed, the rights and obligations of the parties pursuant to this Deed are in addition to and do not derogate from any other right or obligation between the parties under any other Deed or agreement to which they are parties.

11. Variations and amendments

No term or provision of this Deed may be amended or varied unless reduced to writing and signed by the parties in the same manner as this instrument.

12. Applicable law

This Deed will be governed and construed in accordance with the laws of the State.

13. Notices

13.1 Notices must be sent to the other party at the address shown in this Deed, or the address last notified to the other party in writing, or in the case of the Subcontractor, at the Subcontractor's registered office.

13.2 All notices must be in writing and signed by the relevant party and must be given either by hand delivery, post or facsimile transmission.

13.3 If delivery or receipt of a notice is not made on a Business Day, then it will be taken to be made on the next Business Day.

EXECUTED AS A DEED

Signed, sealed and delivered by Sydney Trains (ABN 38 284 779 682)

By [*to be inserted by the Customer*] but not so as to incur personal liability

In the presence of: [insert name of witness]

Signature of Customer	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Signed, sealed and delivered by CNS - Solutions & Support GmbH

By [*to be inserted by the Subcontractor*] but not so as to incur personal liability

In the presence of: [insert name of witness]

Signature of Subcontractor	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Schedule 9: Performance Guarantee

Deed dated the _____ day of _____ 20 _____

Between Sydney Trains (ABN 38 284 779 682) (Customer)

_____

And [*insert full legal name and any ACN/ABN of the Guarantor*] (Guarantor)

_____

Purpose Frequentis Australasia Pty Ltd (ABN 25 107 550 489) (Contractor) has agreed to offer to supply Products and Services to the Customer under a contract dated [*insert date of Customer Contract*] (Customer Contact).

DEFINITIONS

Business Day means any weekday that is not a public holiday in New South Wales.

Contract Authority means [*insert legal name of Contract Authority*].

Head Agreement means *[insert date and parties to the Head Agreement]*.

Insolvency Event means where the Contractor:

(a) stops or suspends or threatens to stop or suspend payment of all or a class of its debts;

(b) is insolvent with the meaning of Section 95A of the *Corporations Act* 2001 (Cth);

(c) must be presumed by a court to be insolvent by reason of an event set out in Section 459C(2) of the *Corporations Act* 2001 (Cth);

(d) fails to comply with a statutory demand within the meaning of Section 459F(1) of the *Corporations Act* 2001 (Cth);

(e) has an administrator appointed or any step preliminary to the appointment of an administrator is taken;

(f) has a mortgagee enter into possession of any property of that Party;

(g) has a controller within the meaning of the Section 9 of the *Corporations Act* 2001 (Cth) or similar officer appointed to all or any of its property; or

(h) has proceedings commenced, a resolution passed or proposed in a notice of meeting, an application to, or order of, a court made or other steps taken against or in respect of it (other than frivolous or vexatious applications, proceedings, notices or steps) for its winding up, deregistration or dissolution or for it to enter an arrangement, compromise or composition with or assignment for the benefit of its creditors, a class of them or any of them.

Notice in Writing means a notice signed by a party's authorised representative or his/her delegate or agent.

BY THIS DEED

By this Deed, the Guarantor guarantees to the Customer the performance of the obligations undertaken by the Contractor under the Customer Contract on the following terms and conditions:

1. If the Contractor (unless relieved from the performance of the Customer Contract by the Customer or by statute or by a decision of a tribunal of competent jurisdiction) fails to execute and perform its undertakings under the Customer Contract, the Guarantor will, if required to do so by the Customer, complete or cause to be completed the undertakings contained in the Customer Contract.

2. Where the Guarantor consists of more than one legal person each of those persons agree to be bound jointly and severally by this Deed of Guarantee, and:

   (a) where the Customer Contract is made under a Head Agreement, the Contract Authority (acting as agent of the Customer); or

   (b) in all other cases, the Customer,

   may enforce this Deed of Guarantee against all or any of the persons who constitute the Guarantor. [*amend this clause as applicable*]

3. The Guarantor will not be discharged, released or excused from this Deed of Guarantee by an arrangement made between the Contractor and Customer with or without the consent of the Guarantor, or by any alteration, amendment or variation in the obligations assumed by the Contractor or by any forbearance whether as to payment, time, performance or otherwise.

4. The obligations of the Contractor will continue in force and effect until the completion of the undertakings of this Deed of Guarantee by the Guarantor.

5. The obligations and liabilities of the Guarantor under this Deed of Guarantee will not exceed:

   (a) the obligations and liabilities of the Contractor under the Customer Contract; and

   (b) $ [insert dollar amount].

6. Where the Contractor has failed to perform under the Customer Contract, the obligations of the Guarantor will continue even though the Contractor has been the subject of an Insolvency Event.

7. The rights and obligations under this Deed of Guarantee will continue until all obligations of the Contractor under the Customer Contract have been performed, observed and discharged.

8. A notice under this Deed of Guarantee must be a Notice in Writing.

9. The address for services of Notices in Writing under this Deed of Guarantee for a party is, in the case of the:

   Guarantor

   Physical address

   Postal address

   Fax number

   Contractor

   Physical address

   Postal address 10/14 Ashtan Place, Banyo QLD 4014

Fax number

Customer

Physical address

Postal address Level 13, 477 Pitt Street, Sydney NSW 2000

Fax number

Or such other address as a party may notify to the other party in writing from time to time.

10. A Notice in Writing is deemed to be received if:

(a) delivered by hand, when the party who sent the notice holds a receipt for the notice signed by a person employed at the physical address for service;

(b) sent by post from and to an address within Australia, after 3 Business Days;

(c) sent by post from or to an address outside Australia, after 10 Business Days;

(d) sent by facsimile, at the time which the facsimile machine to which it has been sent records that the communication has been transmitted satisfactorily (or, if such time is outside normal business hours, at 9.00 am the next Business Day).

11. The laws of the New South Wales govern the this Deed of Guarantee and the parties submit to the exclusive jurisdiction of the courts of New South Wales.

EXECUTED BY THE PARTIES AS A DEED AT THE DATE STATED BELOW

Signed, sealed and delivered by Sydney Trains (ABN 38 284 779 682).

By [*insert name of Customer representative*]

In the presence of: [*insert name of witness not a party to this Deed*]]

Signature of Customer representative	**Signature of Customer's Witness**
Print Name	**Print Name**
Date	**Date**

Signed, sealed and delivered by Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

in accordance with s127 of the *Corporations Act* 2001 (Cth) by:

Signature Director	**Signature of Director/Secretary**
Print name	**Print name**
Date	**Date**

Schedule 10: Financial Security

Deed dated the _____ day of _____ 20 _____

Between [*insert name of the Customer*] (Customer)

_____

And [*insert name and ACN/ABN*] (Guarantor)

_____

DEFINITIONS

Business Day means any weekday that is not a public holiday in New South Wales.

BY THIS DEED:

1. The _____[*insert name of the Contractor and the ACN/ABN*] (Contractor) has agreed to supply Deliverables to the Customer under a contract [*insert date and name of parties to the Customer Contract*] (Customer Contract).

2. The Guarantor unconditionally agrees to pay to the Customer on demand without reference to the Contractor and separate from any notice given by the Contractor to the Guarantor not to pay same, any sum or sums which may from time to time be demanded in writing by the Customer to a maximum aggregate sum of $ [*insert dollar amount*].

3. The Guarantor's liability under this Financial Security will be a continuing liability until the sooner of:

(a) payment is made up to the maximum aggregate sum;

(b) the Customer notifies the Guarantor that this Financial Security is no longer required;

(c) [*insert date];* [*Note: This date should be the date that is one year from the date that the last Deliverable under the Customer Contract is scheduled to pass its Acceptance Tests, or if no Acceptance Tests were required, the date that is scheduled to be 180 days from the date of delivery of the last Deliverable or performance of the last Service under the Contract]*

(d) the date the Customer and Contractor agree in writing to release the Guarantor.

4. No provision of this Financial Security may be waived, amended, supplemented or otherwise modified except by written instrument signed by the Guarantor and the Customer.

5. The laws of New South Wales govern this Guarantee and the parties submit to the exclusive jurisdiction of the courts of New South Wales.

6. A notice or other communication is properly given or served if the party delivers it by hand, posts it or transmits a copy by facsimile to the address last advised by one of them to the other. Where the notice is given or served by facsimile, the sending party must confirm receipt by any other means.

7. The address for services of notice for a party is, in the case of the:

Guarantor

Physical address

Postal address

Phone number

Fax number

Contractor

Postal address

Phone number

Fax number

Customer

Postal address

Phone number

Fax number

or such other address as a party may notify to the other party in writing from time to time.

8. A notice or other communication under this Financial Security is deemed to be received if:

(a) delivered by hand, when the party who sent the notice holds a receipt for the notice signed by a person employed at the physical address for service;

(b) sent by post from and to an address within Australia, after 3 Business Days;

(c) sent by post from or to an address outside Australia, after 10 Business Days; or

(d) sent by facsimile, at the time which the facsimile machine to which it has been sent records that the communication has been transmitted satisfactorily (or, if such time is outside normal business hours, at the time of resumption of normal business hours).

EXECUTED BY THE PARTIES AS A DEED ON THE DATE STATED BELOW

Signed, sealed and delivered by [*insert name of Customer*]

By [*insert name of Customer representative*]

In the presence of: [*insert name of witness not a party to this Deed*]

Signature of Customer representative

Print name

Date

Signature of Contract Witness

Print name

Date

The Common Seal of [*insert Guarantor's name & ACN/ABN*]

was affixed by [*authority of the Board of Directors*]

in the presence of [*insert name of Director/Secretary or other permanent officer*]

in the presence of [*insert name of Director/Secretary or other permanent officer*]

Signature of Director/Secretary

Print name

Date

Signature of Director/Secretary

Print name

Date

Schedule 11: Dispute Resolution Procedures

1. Expert Determination

1.1 If a Referral Notice is submitted under clause 24.7 of the Customer Contract, the expert is to be agreed between the Parties. If they cannot agree within 28 days of the Referral Notice, the expert is to be nominated on the application of either Party by the Chief Executive Officer, Australian Commercial Disputes Centre of NSW.

1.2 The expert nominated must be a person who is an experienced Australian legal practitioner or a person with practical experience in the technology that is the subject matter of the dispute, unless otherwise agreed. The expert must not be:

(a) an employee of the Parties;

(b) a person who has been connected with this Customer Contract or has a conflict of interest, as the case maybe; or

(c) a person who the Parties have not been able to agree on.

1.3 The expert may appoint any person that the expert believes will be able to provide the specialists skills that are necessary to make a determination, including an Australian legal practitioner. The expert must consult with both Parties prior to appointing such person.

1.4 When the person to be the expert has been agreed or nominated, the Customer, on behalf of both Parties, must engage the expert by letter of engagement (and provide a copy to the Contractor) setting out:

(a) the issue referred to the expert for determination;

(b) the expert's fees;

(c) the procedure for the determination set out in this Schedule; and

(d) any other matter which is relevant to the engagement.

2. Submissions

2.1 The procedure for submissions to the expert is as follows:

(a) The Party that has referred the issue to expert determination must make a submission in respect of the issue, within 30 Business Days after the date of the letter of engagement referred to in clause 1.4.

(b) The other Party must respond within 30 Business Days after receiving a copy of that submission. That response may include cross-claims.

(c) The Party referred to in clause 2.1(a) may reply to the response, but must do so within 20 Business Days after receiving the response, and must not raise new matters.

(d) The other Party may comment on the reply, but must do so within 20 Business Days after receiving the reply, and must not raise new matters.

(e) The expert must ignore any submission, response, reply, or comment not made within the time given in this clause 2.1, unless the Customer and the Contractor agree otherwise.

(f) The expert may request further information from either Party. The request must be in writing, with a time limit for the response. The expert must send a copy of the request and response to the other Party, and give the other Party a reasonable opportunity to comment on the response.

(g) All submissions, responses, replies, requests and comments must be in writing. If a Party gives information to the expert, it must at the same time give a copy to the other Party.

3. Conference

3.1 The expert must arrange at least one conference with both Parties. The request must be in writing, setting out the matters to be discussed.

3.2 Each Party is entitled to be represented at any preliminary conference before the expert by its legal representatives and other authorised representatives, with information and knowledge of the issues.

3.3 The expert is not bound by the rules of evidence and may receive information in any manner the expert sees fit, but must observe the requirements of procedural fairness. Consultation between the expert and a Party must only take place in the presence of the other Party, unless a Party fails to attend a conference or meeting which has been convened by the expert and of which prior notice has been given. Any Party providing information to the expert must provide that information to the other Party.

3.4 The Parties agree that such a conference is considered not to be a hearing that would give anything under this Schedule the character of arbitration.

3.5 In answer to any issue referred to the expert by a Party, the other Party can raise any defence, set-off or counter-claim.

4. Questions to be determined by the Expert

4.1 The expert must determine for each issue the following questions (to the extent that they are applicable to the issue):

(a) is there an event, act or omission that gives the claimant a right to compensation under the Customer Contract:

(i) for damages for breach of the Customer Contract, or

(ii) otherwise in law?

(b) if so:

(i) what is the event, act or omission?

(ii) on what date did the event, act or omission occur?

(iii) what is the legal right which gives rise to the liability to compensation?

(iv) is that right extinguished, barred or reduced by any provision of the Customer Contract, estoppel, waiver, accord and satisfaction, set-off, cross-claim, or other legal right?

(c) in the light of the answers to clause 4.1:

(i) What compensation, if any, is due from one Party to the other and when did it fall due?

(ii) What interest, if any, is due when the expert determines that compensation?

4.2 The expert must determine for each issue any other questions required by the Parties, having regard to the nature of the issue.

4.3 The Parties must share equally the fees of the expert, any other costs associated with the process, including room hire expenses, transcript expenses and the like and the fees of any person appointed by the expert under clause 1.3 for the determination, and bear their own expenses.

4.4 If the expert determines that one Party must pay the other an amount exceeding the amount specified in General Order Form (calculating the amount without including interest on it and after allowing for set-offs), then either Party may commence litigation, but only within 56 days after receiving the determination.

4.5 Unless a Party has a right to commence litigation or otherwise resolve the dispute under the Customer Contract:

(a) in the absence of a manifest error the Parties must treat each determination of the expert as final and binding and give effect to it; and

(b) if the expert determines that one Party owes the other money, that Party must pay the money within 20 Business Days.

5. Role of Expert

5.1 The expert must:

(a) act as an expert and not as an arbitrator, adjudicator or as expert witness;

(b) make its determination on the basis of the submissions of the Parties, including documents and witness statements, and the expert's own expertise;

(c) act impartially, free of bias and with no vested interest in the outcome of the dispute;

(d) adopt procedures for the Expert Determination suitable to the circumstances of the dispute so as to provide for an expeditious cost effective and fair means for the determination of the dispute; and

(e) issue a certificate in a form the expert considers appropriate, stating the expert's determination and giving reasons, within 45 Business Days after the receipt of the information in clause 2.1(d).

5.2 If a certificate issued by the expert contains a clerical mistake, an error arising from an accidental slip or omission, a material miscalculation of figures, a mistake in the description of any person, matter or thing, or a defect of form, then the expert must correct the certificate and give notice to the Parties of such correction.

6. Confidentiality

6.1 Each Party involved in the expert determination process, including the expert, the Parties, their advisors and representatives shall maintain the confidentiality of the expert determination process and may not use or disclose to anyone outside of the expert determination process, the expert's determination, or any information received or obtained, in the course of the expert determination process, including the existence of that information, except to the extent:

(a) the Parties have otherwise agreed in writing;

(b) the information is already in the public domain;

(c) disclosure is required to a Party's insurers, auditors, accountants or other professional advisers;

(d) disclosure is required for the purposes of any legal proceedings relating to the dispute or the expert's determination; or

(e) disclosure is otherwise required by law.

Schedule 12: PIPP

[The sample PIPP has not been included. See Annexure B of the Customer Contract for the PIPP.]

ANNEXURE A TO THE CUSTOMER CONTRACT ADDITIONAL CONDITIONS

PART A: SPECIFIC VARIATIONS TO PROCURE IT

1. Specific Variations to Part 2: Customer Contract

1.1 On and from the Commencement Date, Part 2 of ProcureIT Version 3.1 'Customer Contract' is varied as follows:

(a) in clause 13.10 the word 'AAD' is deleted and replaced with '*creation*';

(b) in clause 18.4, the words 'Notwithstanding any other clause in the Customer Contract,' are deleted and replaced with '*Subject to the exceptions set out in clause 18.5 and any other exceptions set out in the Additional Conditions,'*;

(c) in clause 19.8, the references to clause '18.4' are deleted;

(d) the following words are inserted at the beginning of clause 25.4(a), '*if the Order Documents do not state an amount that is payable on termination,*'; and

(e) in clause 25.4(a) the words '; and' are deleted and replaced with '*; or*'.

2. Specific Variations to Module 7

2.1 On and from the Commencement Date, Module 7 of ProcureIT Version 3.1 'Professional Services' is varied as follows:

(a) in clause 6.1(a) the words 'in all material respects during the Warranty Period' are deleted;

(b) clause 6.2(c), 6.2(e) and 6.2(g) are deleted and replaced with 'Not used' and clauses 6.2(d) and 6.2(f) are renumbered 6.2(a) and 6.2(b) respectively;

(c) in clause 6.2(d) the word 'or' is inserted at the end of that clause; and

(d) in clause 6.4:

(i) the words 'from the Commencement Date until the end of the Warranty Period in relation to the Professional Services that' in the first and second lines are deleted; and

(ii) the words 'in all material respects' in the last line are deleted.

PART B: OTHER ADDITIONAL CONDITIONS

3. Definitions

3.1 In these additional conditions:

"**Application**" means each of the following:

(a) DTTS;

(b) IMS; and

(c) CIMS,

as the context requires.

"**Customer Data**" means:

(a) data, information and other materials provided to, or generated by, the Contractor relating to the Customer or any other Agency or any of their operations, facilities, customers, Personnel, assets and programs (**Raw Data**); and

(b) data, information and other materials in any format whatever generated, stored, processed, retrieved, printed or produced by or on behalf of the Contractor utilising the Raw Data.

"**Business Change**" means:

(a) any Divestiture; or

(b) any Restructure of the Customer, or any consolidation (including the performance of common functions) of the Customer or any part of the Customer with any other entity, including a State-owned corporation.

"**CIMS**" means the customer information management system described in the RFP and the High-Level Design

"**Customer Environment**" means the combination of hardware, software, systems and network infrastructure and services used by the Customer from time to time.

"**Divestiture**" means any sale or divestiture of all or part of the Customer, its business or other assets, in whatever form (including by way of an initial public offering of shares).

"**DTTS**" means the day of operations timetable system as described in the RFP and the High-Level Design.

"**High-Level Design**" means the design set out in Annexure A of the PIPP.

"**IMS**" means the incident management system described in the RFP and the High-Level Design.

"**Interfacing Contractor**" means a person who supplies goods, services or other inputs with whom the Contractor must interface or interact to supply the Deliverables or otherwise as part of completing the project described in the PIPP, and includes the Key Contractors.

"**Key Contractor**" means each of the following:

(a) Ajilon Australia Pty Ltd;

(b) any other person specified as a 'key contractor' by the Customer from time to time.

"**Restructure**" means any restructure, dissolution, merger, transfer of any or all of its assets, Personnel, and liabilities, in respect of all or any part of the Customer's business or operations.

"**RFP**" means the request for proposals titled 'No WS178494 Rail Operations Centre (ROC) Technology Solution' dated 7 July 2014.

"**System**" means the rail operations centre technology solution comprising each of the Applications as described in the RFP and the High-Level Design.

"**Transition Services**" means any transition services that the Customer is required to supply relating to a Business Change.

4. Requirements for design Deliverables

REQUIREMENTS

4.1 The Contractor must:

(a) ensure the design Deliverables that it supplies under the Customer Contract:

(i) are consistent with, and is based on, the High-Level Design; and

(ii) meet the other Contract Specifications;

(b) supply design Deliverables for IMS which ensure that:

(i) IMS meets all of the requirements specified for that Application in the RFP, the PIPP (including in the High-Level Design) or any other component of the Contract Specifications;

(ii) IMS integrates and interoperates with each other Application so that the System meets the requirements for the System specified in the RFP, the PIPP (including in the High-Level Design) or any other component of the Contract Specifications; and

(iii) IMS integrates and interoperates with, the Customer Environment:

(A) as described in the RFP, the PIPP (including in the High-Level Design) or any other component of the Contract Specifications; and

(B) without causing any outage, interruption or degradation of any component of the Customer Environment; and

(c) design IMS in a manner that minimises the effort required to have the IMS modified or integrated with other software at a later date.

INTERFACES

4.2 To the extent that the Contractor is required to design any interfaces between:

(a) IMS and the other Applications; or

(b) IMS and the Customer Environment,

the Contractor must design those interfaces:

(c) in a way that will enable the interface to accommodate subsequent updates and new releases of the software to which the interface relates (including updates and new releases for IMS); and

(d) so that those interfaces are capable of being used as the basis for interfaces between IMS and other software.

METHODOLOGIES

4.3 The Contractor must supply the Deliverables using methodologies specified in the PIPP.

5. Approval of Documents

APPLICATION

5.1 The process in this clause 5 applies to all Deliverables that are Documents.

SUBMISSION

5.2 The Contractor must submit all Deliverables which are Documents for approval in accordance with this clause 5 by the applicable date for that Deliverable specified in the PIPP.

5.3 AAD for a Document will occur on the date on which that Document is approved in accordance with this clause 5.

APRROVAL

5.4 The Customer must, within 15 Business Days after a Document is submitted to the Customer (or any alternative timeframe agreed between the Parties in writing), review that Document and give the Contractor Notice in Writing specifying that:

(a) the Document meets the Contract Specifications and the Customer approves the Deliverable; or

(b) the Document does not meet the Contract Specifications and the Customer requires amendments to the Document, in which case the Customer must specify those amendments in the Notice in Writing.

5.5 If the Customer gives the Contractor a Notice in Writing requiring amendments to a Document under clause 5.4(b) of these Additional Conditions, the Contractor must, within 5 Business Days (or any alternative timeframe agreed between the Parties in writing), prepare a revised version of the Document which addresses all of the amendments required by the Customer.

5.6 The Parties must repeat the process in this clause 5 until the Customer approves each Document in accordance with clause 5.4(a) of these Additional Conditions or the Customer gives the Contractor a Notice in Writing in accordance with clause 5.7 of these Additional Conditions.

TERMINATION

5.7 If the Customer gives a Notice in Writing under clause 5.4(b) of these Additional Conditions 3 or more times for a Document, the Customer may terminate the Customer Contract to the extent it relates to that Deliverable and any related or dependent Deliverables supplied, or to be supplied, under the Customer Contract, with immediate or later effect, by giving the Contractor a Notice in Writing.

REFUND

5.8 If the Customer exercises its right under clause 5.7 of these Additional Conditions, the Contractor must, within 10 Business Days after receiving the Notice in Writing, refund to the

Customer all amounts paid by the Customer in connection with the component of the Customer Contract that has been terminated.

6. Background checks

CONTRACTOR CHECKS

6.1 If requested by the Customer, or otherwise required by a Customer policy specified in the Order Documents the Contractor must:

(a) conduct background checks on the Contractor's Personnel in the performance of the Customer Contract as and when required by the Customer or as specified in the applicable Customer policy; and

(b) not use any Personnel in the performance of the Customer Contract who do not meet the requirements specified by the Customer (acting reasonably) from time to time, including in an applicable Customer policy, (**Customer Personnel Requirements**) unless otherwise directed by the Customer.

6.2 The Contractor must give the Customer the results of any background checks it conducts under clause 6.1 of these Additional Conditions within 2 Business Days of receipt.

CUSTOMER CHECKS

6.3 The Customer may at any time:

(a) carry out the background checks referred to in clause 6.1 of these Additional Conditions itself; and

(b) conduct such other investigations and background checks as the Customer considers appropriate,

(**Customer Checks**).

6.4 From time to time the Customer may (acting reasonably) request assistance relating to the Customer Checks. The Contractor must provide all assistance relating to the Customer Checks requested by the Customer promptly after the Contractor receives that request.

6.5 If a Customer Check shows that a member of the Contractor Personnel does not meet the Customer Personnel Requirements, the Customer must advise the Contractor as soon as possible.

CONSENT

6.6 The Contractor must obtain all necessary consent from Contractor Personnel to enable:

(a) the Contractor and the Customer to conduct the checks or investigations under clauses 6.1 and 6.2 of these Additional Conditions; and

(b) the Contractor to provide the results of its checks or investigations to the Customer.

6.7 If the Contractor is unable to obtain a consent required under clause 6.6 of these Additional Conditions from a person, then, unless the Customer agrees otherwise in writing, the Contractor must:

(a) not engage that person to perform, or remove that person from performing, the Contractor's obligations under the Customer Contract; and

(b) provide a replacement for that person who is acceptable to the Customer within 2 Business Days after the date on which it became aware of that issue.

REMOVAL AND REPLACEMENT

6.8 If:

(a) a check performed by the Contractor or a Customer Check performed by the Customer shows that a member of the Contractor Personnel does not meet the Customer Personnel Requirements; and

(b) that person is engaging in the supply of the Deliverables or the performance of the Contractor's obligations under the Customer Contract,

(**Relevant Person**) the Contractor must immediately:

(c) remove that Relevant Person from the supply of the Deliverables or the performance of the Contractor's obligations under the Customer Contract; and

(d) withdraw and remove all access that the Relevant Person has to the Customer Data, Customer Supplied Items, Customer software or systems or the Sites.

6.9 If the Contractor is required to remove a Relevant Person in accordance with clause 6.8 of these Additional Conditions, the Contractor must replace that Relevant Person:

(a) with a member of the Contractor Personnel who meets the requirements for the Contractor's Personnel specified in the Customer Contract; and

(b) if the Relevant Person is one of the Specified Personnel, with a member of the Contractor Personnel who is approved by the Customer in accordance with clause 8.9 of Part 2 of the Customer Contract.

TERMINATION

6.10 If the Contractor breaches this clause 6, the Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Notice in Writing.

7. Personnel

SKILLS, EXPERIENCE

7.1 The Contractor must:

(a) only use Personnel who:

(i) are suitably qualified, skilled and experienced to supply the Deliverables; and

(ii) have received training on the applicable requirements for supplying the Deliverables, including compliance with all applicable Customer policies; and

(b) ensure that all Contractor Personnel involved in the supply of the Deliverables are fluent in, and communicate with the Customer in, English.

REPLACEMENT PERSONNEL

7.2 The Customer (acting reasonably) may at any time request the Contractor to replace any member of the Contractor Personnel stating the reasons for the requirement.

7.3 If the Customer makes a request under clause 7.2 of these Additional Conditions, the following procedure will apply:

(a) if the reason for the request is due to:

(i) a contravention of a Statutory Requirement, another law or a Customer policy by that member of the Contractor Personnel;

(ii) a breach of the work health and safety obligations or other act or omission by that member of the Contractor Personnel that endangered the health or safety of any person on a premises, Site, facility or other location owned, leased or operated by the Customer; or

(iii) serious misconduct by that member of the Contractor Personnel,

the Contractor must immediately remove that member of the Contractor Personnel from the supply of the Deliverables or the performance of the Contractor's obligations under the Customer Contract;

(b) for any other reason, the Contractor must:

(i) promptly meet with the Customer and discuss its concerns; and

(ii) if, after those discussions, the Contractor cannot demonstrate to the Customer's satisfaction (acting reasonably) that it is able to address the Customer's concerns in a reasonable timeframe, replace that member of the Contractor Personnel; and

(c) if the Contractor is required to replace a member of the Contractor Personnel in accordance with this clause 7, it must ensure that:

(i) where that replacement relates to Specified Personnel, the person is approved by the Customer in accordance with clause 8.9 of the Customer Contract;

(ii) to the extent possible, there is a sufficient handover between the original member of the Contractor Personnel and the replacement so that the replacement is fully aware of the Deliverables and the Customer's requirements in connection with the Customer Contract (at no cost to the Customer); and

(iii) it withdraws and removes all access that the member of the Contractor Personnel being replaced has to the Customer Data, CSI, Customer software or systems or the Sites on the date on which that member of the Contractor Personnel was removed.

7.4 If the Contractor breaches clause 7.3 of these Additional Conditions the Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Notice in Writing.

8. Restrictions relating to locations of performance

8.1 The Contractor must not:

(a) supply any of the Deliverables from or at; or

(b) store, access, send, transfer or make accessible, any of the Customer Data at, to or from,

a location outside of New South Wales unless:

(c) that location is specified in the PIPP; or

(d) the Contractor has the prior written consent of the Customer (which the Customer may withhold or grant in its absolute discretion).

8.2 If the Customer provides the Contractor with consent under clause 8.1 of these Additional Conditions, the Contractor must comply with any conditions imposed by the Customer.

9. Service warranties

9.1 In addition to any other obligations of the Contractor under the Customer Contract, the Contractor warrants and represents that:

(a) all Deliverables which are Services will be supplied in a safe and efficient manner and to the best of the Contractor's skill and knowledge; and

(b) it has the necessary knowledge and resources to supply the Deliverables.

10. Fitness for purpose

10.1 In addition to any other Contract Specifications set out in the Customer Contract, the Contractor must ensure that each Deliverable is fit for the purposes for which it was supplied, including any purposes specified in the PIPP.

11. Defect rectification

BREACH OF SERVICE WARRANTY

11.1 If the Contractor breaches any warranty in relation to any of the Services, the Customer may (in addition to any other remedies it may have at law or under the Customer Contract) require the Contractor to supply the Services again at the Contractor's cost.

WARRANTY PERIOD

11.2 The Warranty Period for each Deliverable that is not a Service commences on AAD for that Deliverable and ends on the date which is 12 months after AAD.

DEFECTS

11.3 Subject to clause 11.4 of these Additional Conditions, without limiting any of the Customer's rights under law or the Customer Contract, if at any time during the Warranty Period for a Deliverable that is not a Service, the Contractor becomes aware of, or the Customer advises the Contractor of a Defect in that Deliverable, the Contractor:

(a) must do all things necessary to correct the Defect:

(i) in accordance with the timeframes specified in the Customer Contract; or

(ii) if no timeframe is specified in the Customer Contract, within 5 Business Days after the date on which the Defect was identified (or any alternative timeframe agreed between the Parties in writing); and

(b) warrants that the replacement or repaired Deliverable will comply with the applicable warranties in the Customer Contract.

11.4 Clause 11.3 of these Additional Conditions does not apply to a Defect to the extent that any of the exceptions set out in clause 7.1 of Module 7 were the cause of that Defect.

REMEDIES FOR SUPPLIER FAILURE TO CORRECT DEFECTS

11.5 Without limiting any of the Customer's rights under law or the Customer Contract, if the Contractor does not correct a Defect in accordance with clause 11.3, the Customer may do any one or more of the following:

(a) require the Contractor to negotiate in good faith to agree a Change Request to the Customer Contract to provide a reduction in the Contract Price to reflect a diminution in value of the applicable Deliverable;

(b) engage another supplier to correct the Defect, in which case the Contractor must pay the costs and expenses suffered or incurred by the Customer in doing so within 30 days of a demand by the Customer to do so; or

(c) pursue any other remedy it may have at law or under the Customer Contract.

12. Additional licence rights

12.1 In addition to any other rights granted under the Customer Contract, if the Deliverables are, or incorporate, any of the Contractor's Existing Material, on and from the date on which they are supplied, the Contractor grants the Customer a non-exclusive, irrevocable, royalty-free licence:

(a) to use, reproduce, modify and adapt the Contractor's Existing Material for its internal business purposes; and

(b) to sub-license any other person to use, reproduce, adapt and modify the Contractor's Existing Material for the Customers internal business purposes, including to supply services and deliverables to the Customer.

12.2 In addition to any other rights granted under the Customer Contract, if the Deliverables are, or incorporate, any third party's Existing Material:

(a) on and from the date on which they are supplied, the Contractor grants the Customer a non-exclusive, irrevocable, royalty-free licence:

(i) to use, reproduce and adapt the Contractor's Existing Material for its internal business purposes; and

(ii) to sublicence any other person to use, reproduce and adapt the third party's Existing Material for the Customers internal business purposes, including to supply services and deliverables to the Customer; and

(b) no additional fees, charges, terms or conditions to those specified in the Customer Contract will apply to that third party's Existing Material.

12.3 The Contractor warrants that it has all rights, licences, consents and other approvals necessary to grant the licences in clauses 12.1 and 12.2 of these Additional Conditions.

13. Civil Liability Act and Liability

13.1 The Parties exclude the operation of Part 4 of the *Civil Liability Act 2002* (NSW).

13.2 Clauses 18.1 and 18.4 of Part 2 of the Customer Contract do not apply to the Contractor's liability for a breach of, or under, any of clauses 12.3 or 20.4 of these Additional Conditions.

14. Cross-termination

14.1 The Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor Notice in Writing if the Customer gives a termination notice for another Customer Contract with an Interfacing Contractor other than for convenience.

15. Costs relating to a termination for convenience

15.1 If the Customer terminates the Customer Contract under clause 25.3 of Part 2 of the Customer Contract, and the Contractor is entitled to recover liabilities, costs or expenses under clause 25.4 of Part 2 of the Customer Contract (**Termination Costs**), the Contractor may only do so to the extent that:

(a) those Termination Costs are unavoidable and are directly, reasonably and necessarily incurred by the Contractor as a result of the termination;

(b) those Termination Costs have not already been recovered by the Contractor through under a Contract Document (including as part of the Contract Price);

(c) the Contractor substantiates that those costs have been or will be incurred to the Customer's satisfaction (acting reasonably);

(d) those costs relate exclusively to the Deliverables and would not have been incurred by the Contractor but for the termination; and

(e) the Contractor has not been able to mitigate those costs despite complying with its obligation under clause 25.3 of Part 2 of the Customer Contract.

16. Multi-sourcing and co-operation

MULTI-SOURCING AND CO-OPERATION OBLIGATIONS

16.1 The Contractor, must establish relationships and arrangements with all other Interfacing Contractors through which they:

(a) work together;

(b) co-ordinate their activities;

(c) co-operate fully and comprehensively with each other;

(d) interface their operations in a manner which is seamless;

(e) integrate the services they each supply;

(f) establish integrated processes which preserve their responsibility for the services they supply and ensure delivery of service level requirements; and

(g) agree the scope of obligations and interactions needed to minimise the need for the Authority to be involved in resolving service problems or managing their relationship,

(**Integration Outcomes**).

16.2 The Contractor must:

(a) provide the Customer and each Interfacing Contractor (as applicable) all co-operation and assistance requested by the Customer or an Interfacing Contractor (as applicable), including by:

(i) working with the Customer and Interfacing Contractors to facilitate the discharge of end-to-end service obligations and the meeting or exceeding of end-to-end service levels; and

(ii) providing the Customer and each Interfacing Contractor with access to materials and other resources; and

(b) do all other things necessary,

to achieve the Integration Outcomes and to ensure that all services and deliverables (including the Deliverables) supplied to the Customer by the Contractor and each Interfacing Contractor, are supplied in a coordinated, effective and timely manner.

16.3 The Contractor:

(a) acknowledges and agrees that any disputes between the Contractor and an Interfacing Contractor (**IC Disputes**) are to be resolved as far as possible without the need for the Customer's intervention; and

(b) an IC Dispute must be reported to, and escalated to, the Customer in accordance with the process set out in the PIPP if it continues for more than 5 Business Days.

16.4 During the course of any IC Dispute, the Contractor must continue working with the Interfacing Contractors to maintain continuity of the Deliverables and the services and deliverables supplied by the Interfacing Contractor, regardless of responsibility.

SYSTEM INTEGRATOR

16.5 The Contractor acknowledges and agrees that the Customer will appoint another organisation as a system integrator who will be responsible for:

(a) preparing the overall detailed design for the System;

(b) co-ordinating the Deliverables from the Contractor; and

(c) is the Customer proceeds to implement and support the System, integrating the Applications to form the System and the Deliverables supplied by the Contractor and other Interfacing Contractors,

(**System Integrator**).

16.6 The Customer will appoint the System Integrator:

(a) as its agent to 'approve' or request amendments to Document under clause 5 of these Additional Conditions; and

(b) to organise, coordinate, manage, check and validate the Customer Contract and the Contractor's performance under the Customer Contract.

16.7 The Customer may change the System Integrator from time to time by giving the Contractor a Notice in Writing. If the Customer does so:

(a) the old System Integrator will cease to become the System Integrator for the purposes of the Customer Contract; and

(b) the person specified as the 'system integrator' in the notice will become the System Integrator for the purposes of the Customer Contract,

on and from the date of the Notice in Writing.

16.8 The Contractor must

(a) interact with the System Integrator; and

(b) treat and comply with, any request, notice, direction or instruction given by the System Integrator on behalf of the Customer which is in the scope of its appointment,

as if the System Integrator was the Customer.

16.9 The Contractor must supply the Deliverables in a manner which allows the System Integrator to discharge its role under its contract with the Customer.

16.10 If directed by the Customer, the Contractor must supply the Deliverables to the System Integrator.

CO-OPERATION AGREEMENT

16.11 From time to time the Customer may give the Contractor a Notice in Writing requesting that the Contractor enter into a co-operation agreement with one or more Interfacing Contractors.

16.12 If the Customer makes a request under clause 16.11 of these Additional Conditions, the Contractor must, promptly after receiving the request (and in any event within 5 Business Days after receiving the request), enter into a co-operation agreement with the Interfacing Contractors specified in the request in a form specified by, or approved by, the Customer.

17. Business Change

RIGHTS

17.1 The Contractor acknowledges and agrees that the Customer may by giving notice to the Contractor:

(a) use the Deliverables (including for the benefit of a Relevant Entity);

(b) sublicense or permit one or more persons to use any of the Deliverables;

(c) assign some or all of its rights under the Customer Contract to one or more persons;

(d) novate all or part of the Customer Contract to one or more persons; or

(e) require the Customer to supply one or more of the Deliverables directly to any other Relevant Entity,

for any one or more of the following purposes:

(f) providing the Transition Services to a Relevant Entity;

(g) facilitating or implementing a Business Change; and

(h) facilitating the provision of services:

(i) by the Customer to or for the benefit of one or more Relevant Entities; or

(ii) by one or more persons to, or for, the benefit of the Customer.

17.2 The Contractor consents to any novation or assignment notified to the Contractor in accordance with clause 17.1 of these Additional Conditions

CONTRACTOR FACILITATION

17.3 The Contractor must, on request by the Customer, do all things reasonably necessary:

(a) to facilitate a Business Change; and

(b) to give effect to or implement any of the arrangements contemplated in clause 17.2 (including promptly executing all necessary documents and granting all necessary rights).

DISCLOSURE

17.4 In addition to any other rights that the Customer has under the Customer Contract, the Customer may disclose the terms of the Customer Contract and any Confidential Information of the Contractor:

(a) to any department or office of the State of New South Wales or other Agency;

(b) to any Relevant Entity or proposed Relevant Entity; or

(c) to any adviser or personnel of any such person specified in clauses 17.4(a) or 17.4(b) of these Additional Conditions.

18. Engagement and RFP

RFP

18.1 The Contractor acknowledges and agrees that:

(a) the RFP was for the design, implementation and support of the System;

(b) the Contractor submitted a response to the RFP relating to IMS;

(c) despite the Parties entering into the Customer Contract for the detailed design component for the System, the Customer has not completed or awarded the other components of the RFP (**Other RFP Components**); and

(d) nothing in the Customer Contract affects, or makes any representation relating to, the Other RFP Components and the Customer may award part or all of the Other RFP Components to the Contractor, any other person or any combination of them.

18.2 The Customer excludes any and all liability to the Contractor relating to the outcome of the RFP (including if the RFP is awarded to another person).

18.3 The Contractor releases the Customer from any and all claims that the Contractor may have against the Customer relating to the RFP. The Customer may plead this clause 18.3 in bar to any proceedings commenced by the Contractor relating to the RFP.

IMPLEMENTATION AND SUPPORT

18.4 If the Contractor is selected as a preferred supplier to implement and support any component of the System, the Contractor must negotiate in good faith to agree the terms of the contract under which the Contractor will supply the applicable services and other deliverables (**Final Contract**) based on:

(a) ProcureIT v 3.1;

(b) the draft General Order Form (provided by the Customer to the Contractor on or around 23 February 2015);

(c) the draft Order Forms for Modules 3 and 5 (provided by the Customer to the Contractor on or about 22 October 2014);

(d) the draft Additional Conditions (provided by the Customer to the Contractor on or around 23 February 2015); and

the Service Level Agreement (provided by the Customer to the Contractor on or around 22 October 2014), as updated by the table set out in Attachment 1 to these Additional Conditions which specifies:

(e) the issues raised by the Contractor relating to the documents listed in this clause 18.4 as part of its overall response to the RFP; and

(f) the positions negotiated between the Contractor and the Customer relating to those issues as at the date of the Customer Contract.

18.5 The Contractor warrants and represents that:

(a) Attachment 1 sets out all of the issues that the Contractor wishes to raise relating to documents listed in clause 18.4 of these Additional Conditions; and

(b) it will not seek to raise any further comments on those documents or alter the positions specified as 'agreed' or 'closed' in Attachment 1, except to the extent necessary to respond to changes required by the Customer.

18.6 If:

(a) the Contractor is selected as a preferred supplier for some or all of the Other RFP Components; and

(b) the Final Contract is agreed and executed by the Parties,

then:

(c) that Final Contract will supersede the Customer Contract;

(d) the Customer Contract will be terminated to the extent that the Final Contract includes Deliverables that have been or are to be supplied under the Customer Contract;

(e) all Deliverables supplied under the Customer Contract and which are included in the scope of the Final Contract will be deemed to have been supplied under the Final Contract; and

(f) the terms of the Final Contract will apply to those Deliverables as if they had been supplied under the Final Contract.

18.7 If:

(a) the Contractor is selected as a preferred supplier to implement and support a component of the System; and

(b) the Final Contract is not executed by the Parties by 31 October 2015 or an alternative date that is agreed between the Parties in writing,

the Customer may, without any liability to the Contractor, terminate the Customer Contract in its entirety, with immediate or later effect, by giving a Notice in Writing to the Contractor.

19. GIPAA

19.1 The Contractor acknowledges that the Customer may be required to publish certain information concerning this Customer Contract in accordance with sections 27 to 35 of the *Government Information (Public Access) Act 2009* (NSW).

19.2 If the Contractor reasonably believes that any part of the Customer Contract contains information which is commercial-in-confidence or could reasonably be expected to affect public safety or security, then the Contractor must immediately advise the Customer in writing, identifying the provisions and providing reasons so that the Customer may consider seeking to exempt those provisions from publication.

19.3 Within three days of receiving a written request from the Customer, the Contractor must (at no cost to the Customer) provide the Customer with immediate access to information referred to in section 121(1) of the *Government Information (Public Access) Act 2009* (NSW) (but excluding information referred to in section 121(2) of the *Government Information (Public Access) Act 2009*) contained in records held by the Contractor, in the format and using the medium, reasonably required by the Customer. This is a fundamental term of this Customer Contract.

20. Exchange of information between Agencies

20.1 The Customer may disclose, communicate or make available, any information concerning the Contractor or relating to the Customer Contract (including any Confidential Information of the Contractor) to one or more Agencies.

20.2 The Contractor acknowledges and agrees that:

(a) information about the Contractor from any source, including reports of performance, may be taken into account by Agencies (including the Customer) considering whether to offer the Contractor future opportunities for work; and

(b) the communication of such information to any NSW government agency is a communication falling within section 30 of the *Defamation Act 2005* (NSW).

20.3 The Contractor releases the Customer, all other Agencies and the State of New South Wales from and against any claim or cause of action it has or may have arising out of, or in relation to, any disclosure or any communications contemplated in this clause 20 (**Released Matters**). The Customer may plead this clause 20.3 in bar to any proceedings commenced by the Contractor relating to the Released Matters.

20.4 The Contractor indemnifies the Customer against any losses, liabilities, damages, costs and expenses that the Customer or any other Agencies or the State of New South Wales suffers or incurs relating to:

(a) any of the Released Matters; or

(b) any claim by any persons arising out of or relating to the Customer disclosing, or an Agency using, any information provided by the Contractor in accordance with clause 20 of these Additional Conditions.

21. Sites

21.1 The Contractor must supply the Deliverables to or at the sites specified in the PIPP. Each of these sites will be a 'Site' for the purposes of the Customer Contract.

22. Destruction of information

22.1 The Contractor must, and must ensure that all of its Personnel, destroy or return:

(a) all Confidential Information of the Customer; and

(b) all other Customer Data (including any Personal Information),

that is in its, or any of its Personnel's possession or control:

(c) within 5 Business Days of a request from the Customer to do so; or

(d) on termination or expiry of the Customer Contract.

22.2 This clause 22 survives termination or expiry of the Customer Contract.

23. Liability to Agencies and the State of New South Wales

23.1 The Contractor acknowledges and agrees that the Customer holds the benefit of the Contractor's obligations, the Customer's rights and any release or indemnity under the Customer Contract as principal and on trust for each of RailCorp, Transport for NSW and NSW Trains (as if the obligation, right, release or indemnity had been expressed to be for the benefit of RailCorp, Transport for NSW and NSW Trains).

23.2 If any of RailCorp, Transport for NSW or NSW Trains suffers losses as a result of one or more acts or omissions of the Contractor or any of its Personnel relating to the performance, non-performance or termination of the Customer Contract, the Customer will be able to recover those losses from the Contractor:

(a) as if the losses were suffered or incurred by the Customer itself;

(b) to the extent that losses would have been capable of being recovered by the Customer had the Customer suffered those losses; and

(c) subject to the limitations and exclusions of liability set out in clause 18 of the Customer Contract.

24. Changes in Laws

(a) If the Contractor is required to comply with any Laws under the Customer Contract, the Contractor must comply with those Laws as they exist from time to time.

(b) The Contractor must comply with clause 24(a)at its own cost unless the change in Law affects only the rail industry. If the change in Law affects only the rail industry, the Contractor may submit a contract variation if the change in Law results in material additional costs to the Contractor in the provision of the Services under the Customer Contract.

(c) **"Laws"** for purposes of this clause 24 include Statutory Requirements, statutes, regulations, by-laws, ordinances or subordinate legislation, standards and codes of conduct.

Attachment A – Commercial positions table

The following table sets out:

- the issues that the Contractor has raised in relation to the documents listed in clause 18.4 of these Additional Conditions as part of its response to the RFP and the positions and principles that have been reached or agreed between the Parties in relation to those issues; and
- other commercial principles that the Parties have agreed for the purposes of the Final Contract (as defined in clause 18.4 of these Additional Conditions:

#	Issue and Clause reference	Commercial principles proposed or agreed	Status
General Order Form			
1	Item 21 - Liquidated Damages	The Parties have agreed that liquidated damages of [redacted] per day will apply for missed milestones or due dates. The milestones and due dates for implementation will be confirmed as part of the detailed design phase. The maximum total amount of Liquidated damages is [redacted] of the total contract value.	Open
2	Item 23 - Escrow	The Parties have agreed that: (a) the version of escrow deed in Schedule 5 of the General Order Form will be used by the Parties and that document and the General Order Form will be updated to reflect the agreed principles in this row; (b) subject to the exception in paragraph (c), the Contractor must include the following material in escrow for each item of software that is a Deliverable (including any modification or customisation of that Deliverable) (each a **Software Deliverable**): (1) the object code of that Software Deliverable; (2) all source code, programmer notes, plans, drawings, software (including third party software) documentation and other information that would enable a competent programmer to understand the program logic of that Software Deliverable and keep that Software Deliverable in good order or repair; (3) a copy of all tools and libraries required to recompile the source code of that Software Deliverable and full written details of the development environment to allow the Customer (or a competent contractor) to replicate that Software Deliverable; and (4) any code and build tools necessary for the Customer (or a competent contractor) to rebuild the complete Software Deliverable; (c) the Contractor is not obliged to include any source code in escrow for any software that is: (1) owned by a third party; (2) not part of a Software Deliverable; and (3) commercially available of-the-shelf software, (**Third Party COTS**); (d) the Contractor must include a list of all Third Party Software (including the applicable software	Closed

		vendor) in escrow; (e) the Contractor must update the escrow material to ensure it is up to date to reflect any New Release supplied to the Customer; and (f) access to the escrow material will only be provided for testing and verification, if it is released or under any other circumstances, set out in the version of the escrow deed set out in Schedule 5 of the General Order Form.	
3	Item 29-- Quality Standard Accreditation	The Parties have agreed that to the extent that the Customer requires additional accreditations which are not specified in item 29 of the General Order Form and that additional accreditation would cause the Contractor to incur material additional costs, the Contactor is entitled to raise a Change Request to address those additional costs.	Closed
4	Item 30 - Contractor's Compliance with Standards, Codes and Laws	The Parties have agreed that if there are any changes to Laws, standards or codes of conduct during the term of the agreement which are specific to the rail industry, and compliance with those changes requires the Contractor to incur material additional costs, the Contractor is entitled to raise a Change Request to address those additional costs.	Closed
5	Item 34 - Intellectual Property	The Parties have agreed that third party material will be licensed on the same terms as all other Deliverables supplied under the proposed Customer Contract, except for open source software. In the case of open source software the principles set out in row 12 will apply.	Closed
6	Item 36 - Insurance	The Parties have agreed that the Contractor will increase professional Indemnity insurance to $10,000,000 (AUD) as per contract requirements. The Customer acknowledged that an uplift of [redacted] to contract price is acceptable to cover the implementation and 5 year support term.	Closed
7	Item 36 - Insurance	The Parties have agreed that only rental vehicles will be used in the delivery of the Deliverables and are covered by separate rental insurance coverage. The level of public liability insurance will be $20,000,000 in respect of each claim.	Closed
8	Item 37 - Performance Guarantee	The Parties have agreed that the Contractor will provide the form of performance guarantee included in Schedule 9 of the General Order Form executed by Frequentis AG. Clause 5(b) of that performance guarantee will be deleted.	Closed

9	Item 38 - Financial Security	The Parties have agreed that the Contractor will provide a financial security in the form specified in Schedule 10 of the General Order Form for an amount equal to 10% of the Contract Price. The financial security must be with the Commonwealth Bank and back to backed with Deutsche Bank in Austria.	Closed
10	Item 39 - Limitation of Liability	The Parties have agreed that the original position in the General Order Form will apply and the quantum of the liability cap will be 2 times the Contract Value.	Closed
11	Item 42 - Termination for Convenience	The Parties have agreed that if the Customer exercises its termination right under clause 25.3 of the proposed Customer Contract (termination for convenience) the Customer must pay the Contractor's actual costs in the following categories: (a) the direct costs incurred by the Contractor for demobilising its own employees; and (b) any direct costs payable to any subcontractor as for work done prior to the termination or as a result of the termination, subject to the limitations set out in the Additional Conditions. The Contractor must provide evidence of any costs claimed that is satisfactory to the Customer as a condition of the termination costs being payable.	Closed
Additional Conditions			
12	Open Source Software, clauses 1.1(m), 1.1(o), 5.1(c) and 30	The Parties have agreed that the following principles will apply for open source software (**OSS**): (a) all OSS components of the Deliverables will be licensed on the terms of the applicable OSS licence; (b) the Contractor must ensure that the scope of the licence granted for any OSS under the applicable OSS licence is at least as broad as the licences granted for other Licensed Software and Existing Material in the ProcureIT v3.1 (as amended by the proposed Additional Conditions) provided that such OSS and Third Party Software is used in accordance with the license terms defined in ProcureIT v3.1 (as amended by the proposed Additional Conditions); (c) the Contractor must ensure that there are no restrictions, obligations or terms that are more onerous on the Customer than, or inconsistent with, the restrictions, obligations or terms set out in ProcureIT v3.1 (as amended by the proposed Additional Conditions), including any obligations in those OSS licences relating to assignment of intellectual property rights in changes to the OSS	Closed

		or the disclosure of changes to the OSS; (d) the Customer provides indemnities and warranties relating to Intellectual Property Rights infringement claims for OSS equivalent to that provided under Procure IT v3.1 and the proposed Additional Conditions for other Licensed Software and Existing Material; (e) all warranties under Procure IT v3.1 and the proposed Additional Conditions apply to OSS and the Contractor is obliged to remedy defects in, or replace that OSS if necessary; and (f) the Contractor must not incorporate OSS in the Deliverables unless the Customer provides its written approval. The relevant provisions of the proposed Additional Conditions will be updated accordingly.	
13	Restrictions relating to locations of performance, clause 22	The Parties have agreed that the Customer will not unreasonably withhold its consent to the Contractor under clause 22.1.	Closed
14	Customer Supplied Items (CSIs), clause 25	The Parties have agreed that clause 25 will be amended so that the Contractor is only required: (a) to comply with third party contracts relating to CSIs; and (b) not cause the Customer to breach, or incur any liability, under those contracts, to the extent those terms / basis of liability, have been advised to the Contractor in writing.	Closed
15	Business Change, clause 26.1	The Parties have agreed that: (a) a definition of 'Business Change' will be included which covers: (1) any Divestiture (as defined in the proposed Additional Conditions); or (2) any restructure, dissolution, merger, transfer of any or all of its assets, staff, and liabilities, in respect of all or any part of the Customer's business or operations, or any consolidation (including the performance of common functions) of the Customer or any part of the Customer, with any other entity. (b) clause 26.1 will be updated to relate only to a 'Business Change'; and (c) any additional assistance required from the Contractor in connection with a Business Change which is in addition to that contemplated in clause	Closed

		26.3 will be subject to the Parties agreeing a Change Request.	
16	Indemnity relating to exchange of information, clause 29.3	The Parties have agreed that clause 29.3 will be deleted and replaced with the following (which is the position agreed under the Customer Contract for detailed design): *29.3 The Contractor releases the Customer, all other Agencies and the State of New South Wales from and against any claim or cause of action it has or may have arising out of, or in relation to, any disclosure or any communications contemplated in this clause 29 (**Released Matters**). The Customer may plead this clause 29.3 in bar to any proceedings commenced by the Contractor relating to the Released Matters.* *29.4 The Contractor indemnifies the Customer against any losses, liabilities, damages, costs and expenses that the Customer or any other Agencies or the State of New South Wales suffers or incurs relating to:* *(a) any of the Released Matters; or* *(b) any claim by any persons arising out of or relating to the Customer disclosing, or an Agency using, any information provided by the Contractor in accordance with clause 29 of these Additional Conditions.*	Closed
17	Civil Liability Act and Liability, clause 33	The Contractor proposes that the future commitment obligations (clause 13 of the proposed Additional Conditions) be subject to the liability cap and the exclusion of Consequential Loss under the proposed terms of the Customer Contract. The Customer is prepared to consider this depending on the outcome of the detailed design phase.	Open
18	Transition Out, clause 37.7	The agreed position is that clause 37.7 can be deleted on the condition that the Customer has the necessary rights to continue to use any source code that is provided under the Customer Contract as necessary to support the Application and the System.	Closed
19	Additional Conditions: New clause	The Parties have agreed to include the following new clause in the proposed Additional Conditions: *xx.1 The Contractor acknowledges and agrees that the Customer holds the benefit of the Contractor's obligations, the Customer's rights and any release or indemnity under the*	Closed

Customer Contract as principal and on trust for each of RailCorp, Transport for NSW and NSW Trains (as if the obligation, right, release or indemnity had been expressed to be for the benefit of the public transport agency).

xx.2 *If RailCorp, Transport for NSW or NSW Trains suffers losses as a result of one or more acts or omissions of the Contractor or any of its Personnel relating to the performance, non-performance or termination of the Customer Contract, the Customer will be able to recover those losses from the Contractor:*

(a) *as if the losses were suffered or incurred by the Customer itself;*

(b) *to the extent that losses would have been capable of being recovered by the Customer had the Customer suffered those losses; and*

(c) *subject to the limitations and exclusions of liability set out in clause 18 of the Customer Contract.*

Other Commercial Principles			
20	System scaling and size	The Contractor has confirmed that limitation of system performance relates to the underlying infrastructure. This can be scaled. The REM software does not restrict the capacity of the system.	Closed
21	Service Level Agreement	The Parties agree the Service Level Agreement as provided by the Customer as part of the RFP comprises a component of the support arrangements that will be negotiated during the detailed design phase.	Closed
22	Milestone Payments	The Parties agree to the following milestone payments for Implementation: (a) Mobilisation 25% (b) Stage 1 - Demonstrator system available for use - New Milestone 5% (c) CDR 15% (d) Stage 2 - SAT REM Pilot with ST Data 15% (e) Stage 3 – SAT REM Deployment with full CIMS and DTTS integration 12.5% (f) Stage 4 – SAT REM Deployment with Integration to ST existing systems 12.5% (g) Cutover or June 30 2017,whichever comes first 15%	Closed

ANNEXURE B TO THE CUSTOMER CONTRACT

Schedule 12: PIPP

1. Introduction

1.1. The Customer is establishing a new Rail Operations Centre (ROC).

1.2 The Customer wishes to implement new technologies at the ROC which will provide enhanced capability to improve key 'day of operations' processes (the ROC Technology Solution).

1.3 The ROC Technology Solution consists of the development of four new technology systems (or system capabilities). These systems include:

a) Day of Operations Timetable System (DTTS);

b) Incident Management System (IMS);

c) Customer Information Management System (CIMS); and

d) Operational Visual Display System (which will be tendered at a later date).

1.3A The Contractor has been selected as the contractor responsible for the Services and Deliverables specified in this PIPP in respect of section 1.3(b).

1.4 By implementing the ROC Technology Solution the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail – Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay -** Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15 % by 2018.
Increased operational performance and opportunity for timetable enhancements – Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay** – Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the service back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The program shall reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer	**Reduced Customer Perceived Delay -** Improvements to the timeliness, relevance and consistency of customer

information during delays – Improving the customers' ability to make decisions about their transport options.	information, particularly during disruption, will reduce the customer's perceived time of their journeys by 11% by 2018.
Better realising the benefits of future investments in rail capacity – Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function -** The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc.). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC Infrastructure design requirements.
A new world class operating centre and culture – Transforming the way 'day of operations' activities are managed within Sydney Trains, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment -** The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service – Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX -** The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability – Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX -** enabled by new systems, process improvements and colocation.

(together, the ROC Technology Solution Objectives).

1.5 To allow the Customer to better evaluate the Contractor's Solution for the ROC Technology Solution, the Customer wishes to engage the Contractor to undertake the Services and Deliverables specified in sections 4 and 5 of this PIPP including, among other things, the Detailed Design (Release 1) Phase (the **"Project"**).

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of the Project.

1.7 The sequence of the ROC Technology Solution has been staged as follows:

a) the RFP which solicited the solution being proposed by the Contractor;

b) the High Level Solution Design Phase which assessed the veracity of the proposed solution and the capability of the Contractor. The Deliverables of the High Level Solution Design Agreement represent the core documents required by the Contractor to provide the Detailed Design Deliverables;

c) the Project which is undertaken during the Detailed Design Phase; and

d) subject to the Customer's acceptance of the Contractors performance and related Deliverables under the Detailed Design Phase (including negotiation of a Final Contract that may encompasses a number of the obligations of this Customer Contract) the Customer may, at its sole discretion, notify the Contractor of its intention to transition to the Final Contract. In such situation, the Customer Contract will lapse concurrently to the commencement to the Final Contract in accordance with clause 18.4 of the Additional Conditions.

1.8 On or around 10 August 2015 the Parties entered into a letter of intent (**LOI**) under which the Contractor supplied certain services and deliverables (**LOI Deliverables**) that are within the scope of the Deliverables that are to be supplied under the Customer Contract. The Parties acknowledge and agree that:

a) the terms of the Customer Contract apply the LOI Deliverables; and

b) the LOI Deliverables are deemed to have been supplied under the Customer Contract and are Deliverables for the purposes of the Customer Contract.

2. Overview of scope of work and Project delivery model

2.1 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional services and deliverables agreed by the parties as the responsibility of the Contractor;

b) perform all other services functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i. reasonably related to the services or deliverables described in this PIPP; or

ii. reasonably required for the supply of the Deliverables described in this PIPP; and

c) complete the Project, and supply the Services and Deliverables in the following phases:

i. the Project Preparation Phase; and

ii. the Detailed Design (Release 1) Phase.

3. Definitions

Capitalised terms which are not defined in this document have the meaning given to them in the Order Form or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

Acceptance Criteria means the criteria set out in Appendix G.

CIMS has the same meaning given to that term in the Additional Conditions.

Contract Price has the meaning given to that term in section 12.1.1 of this PIPP.

Delivery Risks means the actual or potential problems, issues or risks that may adversely affect the Contractor's ability to perform its obligations relating to the Project or the ROC Technology Solution.

Detailed Design means the Contractor's design of its Solution that has been developed as a Deliverable under the Customer Contract including the suite of documents to be developed by the Contractor as part of the Detailed Design Phase and approved by the Customer.

Detailed Design Phase means the phase of work that includes the Detailed Design (Release 1) Phase and work associated with Release 2 and Release 3.

Detailed Design (Release 1) Phase means the phase described in section 5 of this PIPP.

Dispute means any dispute or disagreement between the Contractor and an Other Contractor (or a dispute between Other Contractors) arising out of or in connection with the Project. A reference to a Dispute, where the Dispute is partly resolved, refers to the unresolved part of the Dispute.

DTTS has the same meaning given to that term in the Additional Conditions.

Effective Date means the date the Contractor undertook early services under the letter of intent dated 7 August 2015.

Environment has the same meaning as 'Customer Environment' in the Additional Conditions.

Entry Criteria means for a phase, the criteria that must be met before the Contractor is entitled to commence the work for that phase, as set out in this PIPP.

Final Contract has the same meaning given to that term in the Additional Conditions.

High-Level Design has the same meaning as the term in the Additional Conditions.

High Level Solution Design Agreement means the contract entered into between the Customer and the Contractor for the design services (which includes the High-Level Design) on or about 24 December 2014.

High Level Solution Design Documents means each document (including the High-Level Design) that is developed by the Contractor as part of the High Level Solution Design Phase and approved by the Customer as CSI.

High Level Solution Design Phase means the phase preceding the Detailed Design Phase.

Implementation & Maintenance Phase means the phase, if the Contractor is selected, for the implementation and maintenance of the Solution.

IMS has the same meaning given to that term in the Additional Conditions.

Initial Requirements means the requirements set out in Appendix A of this PIPP.

Issues Register has the meaning given to that term in section 7B.4.1 of this PIPP.

Milestone Acceptance Form means the acceptance forms in the same or substantially the same form as Appendix E.

Personnel means, as applicable, any director, officer, employee, agent, contractor, sub-contractor or professional advisers engaged in, or in relation to, the performance or management of the Customer Contract.

Pre-Implementation Phase means the phase described in section 6 of this PIPP.

Project has the same meaning given to that term in section 1.5 of this PIPP.

Project Preparation Phase means the phase described in section 4 of this PIPP.

Project Schedule means the schedule set out in Appendix C which sets out the delivery dates for the Services and Deliverables during the Detailed Design Phase.

Other Contractors has the same meaning as 'Interfacing Contractor' in the Additional Conditions.

Release 1 means the implementation of and integration of IMS into the Customer's legacy environment.

Release 2 means the implementation of and integration of CIMS and DTTS into the Customer's legacy environment.

Release 3 means the integration of IMS, CIMS and DTTS systems with one another in the Customer's environment.

Requirements means the Initial Requirements as updated by the Updated Requirements.

Requirements Variation has the meaning given to that term in section 7.2.1 of this PIPP.

RFP has the same meaning given to that term in the Additional Conditions.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC Technology Solution has the meaning given to that term in section 1.2 of this PIPP.

Solution has the meaning given to that term in section 7.1.8 of this PIPP.

System Integrator means Ajilon Australia Pty Ltd (ABN 25 076 517 354).

Technical Documents means the following Documents:

a) Release 1 Architecture Specification for REM Rel 2016.1;

b) Release 1 Functional Specification for REM Rel 2016.1;

c) Release 1 Integration Specification for REM Rel 2016.1; and

d) Updated Release 1 Product Gap Analysis (High level business requirements).

Updated Requirements means the Initial Requirements that are updated in the Detailed Design.

4. Project Preparation Phase

4.1 Overview and purpose of Phase

4.1.1 The purpose of the Project Preparation Phase is to validate the Contractor's strategic intent and the Solution scope.

4.1.2 During the Project Preparation Phase, plans and schedules are prepared and Project resources committed.

4.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Project Preparation Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Project Preparation Phase are approved by the System Integrator,

on or before relevant date(s) specified in the Project Schedule.

4.2 Entry Criteria

4.2.1 The Entry Criteria for the Project Preparation Phase is specified in the table below:

#	Criteria	Description
1.	Customer Contract execution	The Contractor and the Customer have executed the Customer Contract.
2.	Acceptance of High Level Solution Design Deliverables	The Customer has accepted the Deliverables submitted under the High Level Solution Design Agreement or, where conditional acceptance was provided by the Customer, the Contractor has initiated remediation of the conditionally accepted Deliverables.
3.	Personnel	The Contractor provides details of the Contractor Personnel proposed for the Detailed Design (Release 1) Phase, as well as the Final Contract.

4.3 Services

4.3.1 The Contractor must supply the following Services as part of the Project Preparation Phase:

#	Description
1.	Prepare for Project kick-off, including: a. engaging the Personnel with the required skill sets to perform the Contractor's obligations under this PIPP; and b. collating and confirming the names and contact details of those Personnel with the Customer.
2.	All things necessary to prepare for the workshops to be conducted in the Detailed Design (Release 1) Phase, including: a. planning for the Detailed Design (Release 1) Phase workshops; b. assigning the Personnel with the required skill sets to facilitate the Detailed Design (Release 1) Phase workshops; c. requesting Customer Personnel based on required skill sets to attend Detailed Design (Release 1) Phase workshops; and d. preparing materials to facilitate the Detailed Design (Release 1) Phase workshops.
3.	Assess (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project and the ROC Technology Solution) and identify:

	a. any issues; and b. risks that may arise during the course of the Project and the ROC Technology Solution.
4.	Review and update the Issues Register to accurately and comprehensively identify all of the issues and risks that the Customer has identified relating to the Project and the ROC Technology Solution.
5.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Project Preparation Phase.
6.	Provide a list of technical requirements for Detailed Design (Release 1) Phase (e.g. remote access).
7.	Participate in the Customer's induction training or other courses as may be required, from time to time.
8	All things necessary to develop and supply the Deliverables described in section 4.4.

4.3.2 The Contractor must supply the Services which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.4 Deliverables

4.4.1 The Contractor must supply the following Deliverables as part of the Project Preparation Phase:

#	Deliverable	Description	Approver
1.	Detailed Design (Release 1) Phase workshops and planning documents	The following materials required to participate in the workshops required during the Detailed Design (Release 1) Phase. a. workshops and playback schedules; b. Project Schedule (including delivery dates for each Deliverable); c. pro forma workshop agenda; d. list of Contractor participants; and e. list of Customer participants roles.	The Customer (or its nominee)
2.	Templates and Standards	Agreement of Detailed Design documentation templates to be used by the Contractor.	The Customer (or its nominee)
3.	Detailed Design Phase Deliverables	Finalisation of the agreed list of Detailed Design (Release 1) Phase Deliverables that were conditionally accepted by the Customer during the High Level Solution Design Phase.	The Customer (or its nominee)
4.	Personnel	The Customer must approve the list of Specified Personnel proposed for the Detailed Design (Release 1) Phase.	The Customer (or its nominee)

4.4.2 The Contractor must supply the Deliverables which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.5 Customer approval

4.5.1 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Project Preparation Phase in accordance with Additional Condition clause 5.

5. Detailed Design (Release 1) Phase

5.1 Overview and purpose of Detailed Design (Release 1) Phase

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design all of the Requirements (based on the Initial Requirements) and develop Detailed Design(s) for Release 1 of the ROC Technology Solution.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase are approved by the Customer (or its nominee),

on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Previous Phase Discharged	All Services that the Contractor is required to supply during the Project Preparation Phase have been supplied.
2.	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
1.	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Contractor as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensure all required Contractor Personnel are present at the meeting(s);

	c. chairing and presenting the Project meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtain participant approval of contents.
2.	Participate in all necessary workshops with the Customer, the System Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes in those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
3.	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
4.	Develop a Detailed Design for the ROC Technology Solution for Release 1.
5.	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Contractor's configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of the ROC Technology Solution Release 1 to be implemented is understood by all parties.
6.	Conduct a risk management workshop with the Customer, the System Integrator and all relevant Customer stakeholders to identify and agree on risks to the ROC Technology Solution Release 1.
7.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Detailed Design (Release 1) Phase.
8.	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project) to enable the Other Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4.
9.	All other things necessary to develop and supply the Deliverables described in section 5.4 and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Deliverables

5.4.1 The Contractor is responsible for the following Deliverables with appropriate input from the System Integrator. Refer to the Appendix F for allocation of accountabilities and responsibilities.

5.4.2 The Transformation and Change Deliverables (as specified in the table in section 5.4.3) are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Contractor during the High Level Solution Design Phase.

5.4.3 Where the Contractor must contribute to a Deliverable specified in section 5.4.4, the Contractor must work with, contribute to and provide all reasonable assistance requested by the System Integrator to complete the relevant Deliverable.

5.4.4 The Contractor must, in collaboration with the Other Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase:

#	Deliverable	Description	Approval
Technology Deliverables			
1.	Updated High Level Solution Design	Contribute to the updating of the High-Level Design Deliverable being developed by the System Integrator. The Updated High Level Solution Design must be updated to reflect the findings by the Contractor and System Integrator during the Detailed Design (Release 1) Phase and be based in the High Level Design submitted by the Contractor during the High Level Solution Design Phase.	The Customer (or its nominee)
2.	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms & technology required to deliver the functional & non-functional requirements. The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. Document Overview; b. Document Inputs; and c. Phase Scope; Systems architecture: a. High Level Conceptual Overview; b. Level 2 Business Processes; c. Application Usage View; d. System Integration View; e. Application Structure View; f. Information Architecture (including Reference data requirements); g. Infrastructure Usage View; h. Implementation and Deployment View; and i. Manual Integration; Rationale and justification for detailed design	The Customer (or its nominee)

		architectural approach: a. Rationale; b. Architecture Risks; c. Architecture Issues; d. Architecture Constraints; e. Architecture Assumptions; f. Architecture Decisions; and g. Architecture Dependencies; Traceability to both functional and non-functional Release 1 Detailed Requirements: a. Release 1 Mapping; and b. Non-functional Mapping.	
3.	Release 1 Functional Specification	The Release 1 Functional Specification defines the system's required capabilities, appearance and interaction with users. The functional specification will be used to describe the acceptance criteria for the product. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; c. Mapping between business requirements/capabilities and functional requirements for the different products; d. Data mapping and transformation; e. Interface handling of files, messages, etc.; f. System to system interactions; g. One time tasks related to conversions, system implementations, system retirement or system decommissions; and h. In addition, non-function aspects directly related to the functional specifications should be included for the product. Note that items d and e above may be addressed within the Release 1 Integration specification	The Customer (or its nominee)
4	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1 Phase.	The Customer (or its nominee)

		The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. accessibility; b. auditability; c. availability; d. interoperability; e. maintainability; f. manageability; g. performance; h. portability; i. reliability; j. reporting; k. scalability; l. security; and m. usability.	
5.	Release 1 Integration Specification	The Release 1 Integration Specification describes the integration points between the IMS solution and other systems. It specifies the overall, end-to-end integration solution scope for integration of existing legacy systems and Release 1 and includes: a. the integration solution design with all relevant traceability, including traceability to the functional and non-functional requirements; b. system interfaces architecture, platforms and technology required to deliver the requirements; c. any applicable transitional architectures, and reference to domain architectures, business context, integration solution delivery; and considerations and architecture assessment; and d. relevant traceability. The Release 1 Integration Specification will be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The document will also be used by the Contractor to develop the required interfaces. The Release 1 Integration Specification must contain: a. Business processes for message flows; b. Data flows between applications to support the business processes; c. Data required by consumer – request; d. Data available from consumer – response;	The Customer (or its nominee)

		e. Data transformations required; f. Security requirements – consumer / producer; g. Volumetrics of messages – size / frequency; h. Message Patterns; i. Reference Data requirements; and j. Error handling – exception use cases.	
6.	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and governance to ensure that all stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they're necessary.	The Customer (or its nominee)
7.	Release 1 Data Management Plan	The Release 1 Data Management Plan is the out of the box Release 1 data management plan. The data management plan for Release 1 must define transactional data quality and control management design and build activities relevant for effective and efficient system integration based on business rules provided by the Customer. The provision of transactional data quality and control management within the ROC Technology Solution (including validation, cleansing and processing of inbound or outbound data) will be the scope of the Contractor.	The Customer (or its nominee)
8.	Release 1 Data Technical Analysis Outputs	Release 1 Data Technical Analysis Outputs must include: a. Data Requirement Classifications (Master data, Migration Data, BI data); b. Network architecture diagrams (Location and topology of networks for systems integration); c. ERD's (Entity relation diagrams for source and target systems); d. Data Dictionary (Source and target data systems); e. Data Migration Requirements; and f. Data quality rules definition (at data attribute levels).	The Customer (or its nominee)

9.	Updated Implementation Strategy	Contribute to the development of the Implementation Strategy being developed by the System Integrator. The Updated Implementation Strategy shall be baselined against the Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the ROC Technology Solution, including, at a minimum: a. personnel & organisation; b. implementation approach, including: o releases; o system verification and validation; o system change management; o release & deployment management; and o change implementation; c. summary of impacted system components; d. preliminary requirements for 'go-live'; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function.	The Customer (or its nominee)
10.	Release 1 Implementation Plan (draft)	The draft Release 1 Implementation Plan outlines the plan for the roll out of the relevant components for Release 1. The final version of Release 1 Implementation Plan provides a detailed plan and schedule of activities to deploy the solution into the Environment. It must address training, development of, and installation of the product into the Environment, cutover and roll back. The final version must be provided 30 Business Days prior to anticipated deployment date for Release 1.	
11.	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the System Integrator. The Technology Test Strategy refers to	The Customer (or its

		the program test framework and must include the following: a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability. Assumptions, test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document Revision & History; and i. Approvals.	nominee)
12.	Updated Project Management Plan	Contribute to the development of the Updated Project Management Plan (UPMP) being developed by the System Integrator. The UPMP shall be based on the project management plan submitted by the Contractor during the High Level Solution Design Phase and updated to reflect the findings by the Contractor during the Detailed Design Phase. The UPMP must specify, as a minimum, the following: a. current project status; b. project overview; c. scope & deliverables; d. solution approach, including: I. architecture & phase approach; II. organisation Change management; and III. delivery approach; e. budget & schedule; f. dependencies; g. roles & responsibilities; h. project control;	The Customer (or its nominee)

		i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 7.4; and k. key risks & issues.	
13.	RACI	Contribute to the RACI Deliverable being developed by the System Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Other Contractors and the Customer. Note an initial draft of the Detailed Design document deliverables RACI is listed in section Appendix F.	The Customer (or its nominee)
14.	Agreed Final Contract	The Final Contract will incorporate certain detailed design activities. The Final Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor
15.	Detailed Implementation & Maintenance Phase PIPP	The Detailed Design, Implementation and Support PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	The Customer and Contractor
16.	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the Product Gap Analysis submitted by the Contractor during the High Level Solution Design Phase and updated to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)
17.	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the System Integrator. The Release 1 System Test Plan describes how the testing will be delivered for each Release 1 test phase and must include: a. Test plan identifier;	The Customer (or its nominee)

		b. References; c. Introduction; d. Test Objectives; e. Test items; f. Software risk issues; g. Features to be tested and traceability; h. Features not to be tested and reasons; i. Approach including the use of stubs, simulators etc; j. Item pass/fail criteria (if different from Strategy); k. Suspension criteria and resumption requirements (if different from Strategy); l. Test deliverables; m. Environmental needs; n. Staffing and training needs (if different from Strategy); o. Responsibilities; p. Schedule of tasks and assigned staff; q. Planning risks and contingencies; r. Approvals; and s. Glossary.	
18.	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the System Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/capabilities and the decisions made for how each requirement will be implemented; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)
19.	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the System Integrator. The	The Customer (or its nominee)

		Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. Booking and reserving test systems; b. Tracking environment changes; c. Managing environment contention; d. Code/Defect management (Code promotion processes); e. Environment scheduling; f. Configuration tracking; g. Data Management (Extracts, transforms loads); and h. Managing interdependent projects.	
Transformation and Change Deliverables			
20.	Operating Model	Contributing to the development of the Operating Model being developed by the System Integrator. The Operating Model must document and /or identify: a. future state levels 2-4 process flows; and b. capability gaps in systems and processes. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation. Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Future state process flows Deliverable description:** The future state process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following:	The Customer (or its nominee)

		a. future state levels 2-4 process flows; b. how process artefacts are recorded against each process and are to be maintained by the business to support any operational changes. Artefacts include functional and non-functional requirements, business requirements, system requirements, and business rules; c. testing of processes against real life scenarios will be undertaken during User Acceptance Testing. User Acceptance Testing test cases to include the associated real life scenarios. **Capability gaps in systems and processes deliverable description:** Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended future state process flows to confirm the changes to processes and capabilities. The key focus of this deliverable will be on the level 4 gaps and/or variations in processes as dictated by the out of the box technology processes.	
21.	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)
22.	Change Impact Analysis (Release 1)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions (note updated assumptions section): a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change.	The Customer (or its nominee)

		e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes within the ROC. A Change Impact Analysis will accompany the Release 1.	
23.	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the System Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)

5.4.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6. Pre-Implementation Phase

6.1 Overview and purpose of Pre-Implementation Phase

6.1.1 The purpose of the Pre-Implementation Phase is to:

a) facilitate the services necessary for the Contractor's development and implementation of the Requirements into the REM product road-map so that the next release of the Licensed Software can fulfil the specifications and functionality specified in the Technical Documents; and

b) ensure the Licensed Software is available for testing in the System Integration Test Environment (SIT).

6.1.2 The scope of the Services and Deliverables under the Pre-Implementation Phase explicitly excludes integration of the Licensed Software into the SIT environment and testing on-site. The Services and Deliverables included are for the next release of the Licensed Software, not for the adaptation of the interfaces with Other Contractors' software. If the Parties have not entered into the Final Contract by 30 November 2015 for the deferred scope of the Pre-Implementation Phase, the Licensed Software and the required interfaces will not be ready for testing.

6.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Pre-Implementation Phase are supplied and completed;

b) all Deliverables that it is obliged to supply under Pre-Implementation Phase are approved by the Customer (or its nominee); and

c) the Licensed Software delivered under section 6.4 includes each of the Requirements,

on or before the relevant date(s) specified in the Project Schedule.

6.1.4 The Customer must ensure that the draft Technical Documents are approved by the Customer by 30 September 2015 or another date as agreed with the Contractor, and the final Technical documents are approved by the Customer on 31 October 2015.

6.2 Entry Criteria

6.2.1 The Entry Criteria for the Pre-Implementation Phase is specified in the table below:

#	Criteria	Description
1.	Technical Documents Approved	All Technical Documents required for the Licensed Software release have been released and approved and signed off by the Customer.

6.3 Services

6.3.1 The Contractor must supply the following Services as part of the Pre-implementation Phase:

#	Description
1.	Licensed Software feature adaptation services for the Customer's Requirements required in the REM product road-map such that the next release of the Licensed Software can fulfil the specifications and functionality specified in the Technical Documents.
2.	Extension of design efforts from 30 September 2015 until 30 November 2015.

6.3.2 The Contractor must supply the Services which are part of the Pre-Implementation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6.4 Deliverables

6.4.1 The Contractor is responsible for the following Deliverables;

#	Deliverable	Description	Approver
1.	REM System (Software Delivery Stage 2016.R1)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery 2016.R1. Without the order of the adaptation of interfaces, the system will not be ready for testing. The software will not be implemented in to the SIT environment; it will only be made available “to be” implemented in to the SIT environment subject to the signing of the implementation contract.	The Customer (or its nominee)
2.	REM 2016.1 R1 Software	Release of Licensed Software incorporating the Requirements for Release 2016.R1.	The Customer (or its nominee)

6.4.3 The Contractor must supply the Deliverables which are part of the Pre-Implementation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7. Acceptance, Change Request and Assumptions

7.1 Acceptance

7.1.1 The Contractor must:

a) in collaboration with the Customer and Other Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Other Contractors (as required) to ensure that all Detailed Design (Release 1) Deliverables are fit for purpose and meet the agreed Acceptance Criteria.

7.1.2 Subject to section 7.1.10, the Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Implementation & Maintenance Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

7.1.3 Deliverables will be reviewed by the Customer (or the System Integrator acting as the Customer’s nominee). Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with clause 5 of the Additional Conditions, the System Integrator will request the Customer’s endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

7.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

a) Milestone Acceptance Forms must be signed in writing by the Contractors Project Director and Customers Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customers delegate; notification by email of the endorsement is sufficient.

d) Contractors Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) the Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in clause 5.4 of the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

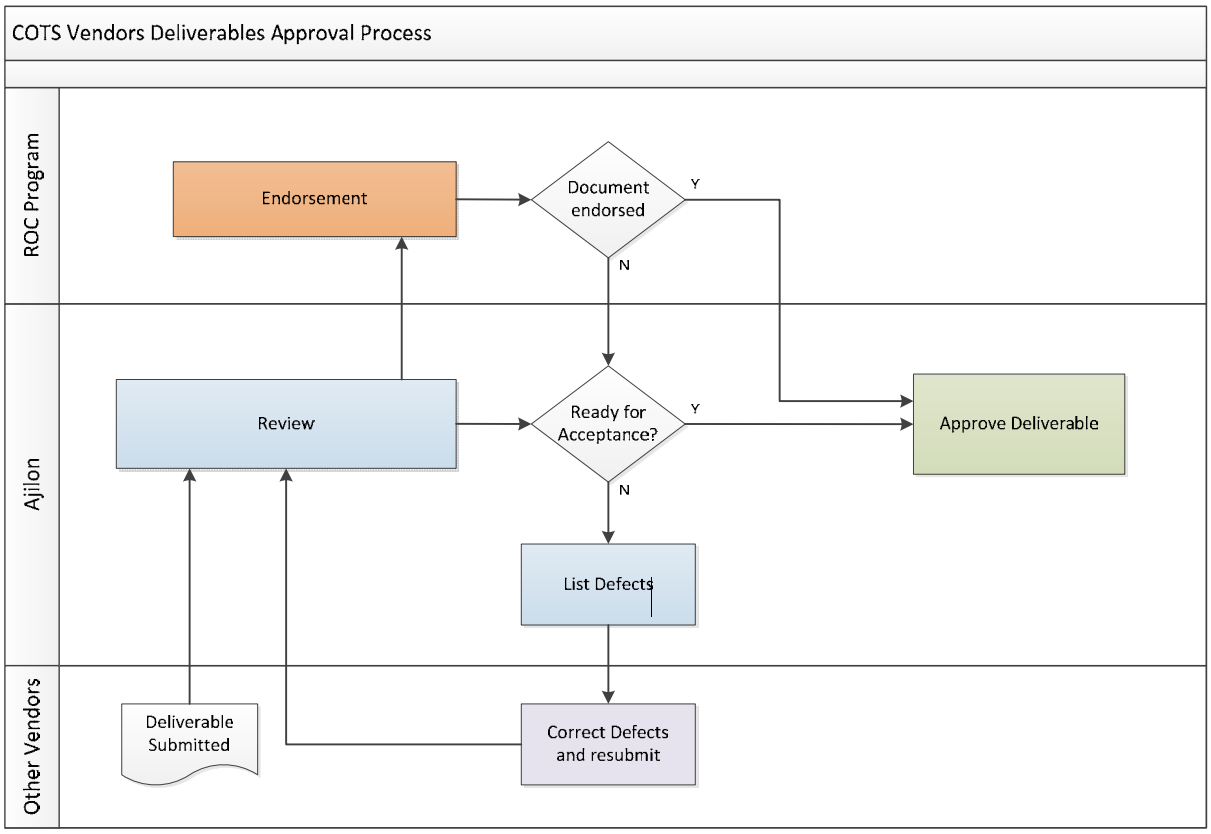
h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of defects (tracked in a spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



7.1.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7.1.6 The Contractor must ensure that the Solution described in the Detailed Design:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

7.1.7 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Detailed Design (Release 1) Phase in accordance with clause 5 of the Additional Conditions.

7.1.8 The Detailed Design supplied by the Contractor under the Detailed Design (Release 1) Phase and endorsed/approved by the Customer/System Integrator (as applicable) will be the 'Solution' for the purposes of this PIPP.

7.1.9 For the purposes of the Customer Contract the 'Contract Specifications' for the Solution will be:

a) the Initial Requirements (as amended or updated in any documents supplied under the Detailed Design Phase and approved by the Customer);

b) the specifications, designs, any performance standards or other requirements for the Solution set out in any of the documents supplied by the Contractor in the Detailed Design Phase and approved by the Customer; and

c) any other the requirements relating to the Deliverables or the Solution as set out in this PIPP.

7.1.10 The Contractor agrees that any review, comment, approval, endorsement or election (including an election in respect of Detailed Design) or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect the Services or Deliverables under this Customer Contract, including in respect of the Detailed Design;

b) does not limit or affect the provision of the Contractor's warranties or indemnities;

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

7.2 Change Request

7.2.1 If:

a) during the Detailed Design Phase the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Initial Requirements (**Requirements Variation**); and

b) that Requirements Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

7.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 7.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits the Detailed Design,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Requirements Variation.

7.3 Not used

7.4 Summary Table of Deliverables and expected delivery dates

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Phase and documented in the associated draft Project Schedule)

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 1	Updated High Level Solution Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 2	Release 1 Architecture Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 3	Release 1 Functional Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 4	Release 1 Non-Functional Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 5	Release 1 Integration Specification	*Document*	*As specified in the draft Project Schedule*	*[To be advised]*
WBS 6	Project Communication Plan for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 7	Release 1 Data Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 8	Release 1 Data Technical Analysis Outputs	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 9	Updated Implementation Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 10	Release 1 Implementation Plan (draft)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 11	Technology Test Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 12	Updated Project Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 13	RACI	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 14	Agreed Final Contract	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 15	Detailed Implementation & Maintenance Phase PIPP	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 16	Updated Release 1 Product Gap Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 17	Release 1 System Test Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 18	Requirements Traceability Matrix for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 19	Technology Environment Management Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 20	Operating Model	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 21	Draft recommended ROC organisation structure	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 22	Change Impact Analysis (Release 1)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 23	Release 1 Training Needs Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

7.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

7.6 Exclusions

Not applicable.

7.7 General Assumptions

7.7.1 **Product Capabilities - IMS-CAP-062.09**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.2 **Product Capabilities - IMS-CAP-002 / Non-functional requirements - NFR-SEC-004**-The governance over access to Sydney Trains "intranet" is under control of Sydney Trains.

7.7.3 **Product Capabilities - IMS-CAP-017.02**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.4 **Product Capabilities - IMS-CAP-039.01**-The display of a heat map for over crowding on platforms and a traffic light for visually tracking is provided as layer in the legacy GIS system.

7.7.5 **Non-functional requirements - NFR-AUD-007**-The accessibility of backend environment is controlled by Sydney Trains and/or the System Integrator.

7.7.6 **Non-functional requirements - NFR-AV-004**-Clustered hardware hosting virtual machines and the licenses for those virtual machines are provided as CSI.

7.7.7 **Non-functional requirements - NFR-IO-003**-A email server will be provided as CSI, an outgoing email address will be supported.

7.7.8 **Non-functional requirements - NFR-IO-004**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.9 **Non-functional requirements - NFR-IO-006**-The Operating Systems clock will be synchronized with standard IT synchronising mechanisms such as e.g. NTP Clock. The maintenance the support and the licenses for such SW is assumed to be provided CSI.

7.7.10 **Non-functional requirements - NFR_PER_NEW**-It is assumed that geographical diversity refers to situations where mobile users or clients lose connectivity with the system due to reception black sports or bandwidth shortage.

7.7.11 **Non-functional requirements - NFR-SEC-002**-It is assumed that the Active Directory environment is a customer supplied item.

7.7.12 **Non-functional requirements - NFR-SEC-010**-The Active Directory system will be provided and configured by Sydney Trains as CSI.

7.7.13 **Interfaces - IMS to BI**-The IMS database will be a Customer Furnished Item. The maintenance- and setup- task of such a shadow database will be part of the Sydney Trains internal IT department.

7.7.14 **Interfaces - IMS to Dashboard**-The assumption is that "Dashboard" refers to "OVDS" (Operational Video Display System).

7.7.15 **Interfaces - SMS**-It is assumed that the SMS provider is a customer furnished item.

7.7.16 **Interfaces – CTI IMS Options Paper - Comms**-It is assumed that the VCS system is a customer furnished item.

7.7.17 **Interfaces - Active Directory** -It is assumed that the Active Directory environment is a customer furnished item.

7.7.18 **Interfaces - Email** -It is assumed that the email system is a customer furnished item.

7.7.19 **Interfaces - Voice Mail**-Text to Speech Engine will be provided as Customer Furnished Item. Vocabulary and repository provided as Customer Furnished Item.

7.7.20 **Interfaces - GIS to IMS**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.21 **PM Plan - Project Timeline**-The assumptions are based on a presumed start of the project implementation in May 2015.

7.7.22 **IMS Options Paper - User Interface**-Regarding NIN: The governance of Sydney Trains "intranet" is under control of Sydney Trains.

7.7.23 **IMS Options Paper - User Interface**-NIN messages received by REM are considered valid, truthful and trustful and will be passed on towards the IMS incident operator as NIN-Notification without further

7.7.24 **IMS Options Paper - User Interface**-The availability of speakers, headphones or other acoustic devices, used to reply the configured acoustic signals in appropriate quality is outside the responsibility of Frequentis.

7.7.25 **IMS Options Paper - Comms**-It is assumed that the SMS provider is a customer Supplied item.

7.7.26 **IMS Options Paper - Comms**-Frequentis REM offers integration with VCS systems which support ECMS232 for Computer Telephony Interface. We assume that EMCS232 will be supported by the incumbent unified communications layer within the ROC. Any alternative solutions will require additional customisation of the product

7.7.27 **IMS Options Paper - Comms**-Text to Speech Engine will be provided as Customer Supplied Item.

7.7.28 **IMS Options Paper - Comms**-Vocabulary and repository provided as Customer Supplied Item.

7.7.29 **IMS Options Paper - Comms**-It is assumed that the VoiceMail provider is a customer Supplied item.

7.7.30 **Implementation Strategy Stage 1**-The site and system environment for deploying the demonstrator system has to be provided by Sydney Trains or the System Integrator.

7.7.31 **Implementation Strategy Stage 1**-It assumed that email communication shall be supported and that an email server will be provided as Customer Furnished Item.

7.7.32 **Implementation Strategy Stage 2**-The raw data containing the information for building the foundation for the system's productive configuration is available and structured.

7.7.33 **Implementation Strategy Stage 2**-SMEs familiar with the data layout, it's meaning and purpose are available and support the data import process

7.7.34 **Implementation Strategy Stage 2**-It is assumed that email communication shall be supported and that an SMS provider is available. Limitations of SMS provider capabilities need to be considered (e.g. two way communication).

7.7.35 **Implementation Strategy Stage 2**-The connection and availability of a SMS provider is regarded a Customer Furnished Item.

7.7.36 **Implementation Strategy Stage 3**-A DTTS system which provides an interface for the IMS systems available.

7.7.37 **Implementation Strategy Stage 3**-A CIMS system which provides an interface for the IMS systems available.

7.7.38 **Implementation Strategy Stage 3**-The integration will be performed outside the productive environment.

7.7.39 **Implementation Strategy Stage 3**-A test environment able to host all three systems: REM, DTTS and CIMS is available and accessible.

7.7.40 **Implementation Strategy Stage 3**-DTTS and CIMS are configured in a way to allow testing of feasible and realistic use cases.

7.7.41 **Implementation Strategy Stage 3**-In case of missing systems to be integrated (DTTS or CIMS), simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.42 **Implementation Strategy Stage 4**-All legacy systems for integration with the IMS are configured and available.

7.7.43 **Implementation Strategy Stage 4**-In case of missing systems to be integrated, simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.44 **Implementation Strategy Stage 4**-It assumed that CTI integration with the VCS shall be supported.

7.7.45 **Implementation Strategy Stage 4**-It is further assumed that the IMS will gain full access to a non productive VCS environment in order to test the integration.

7.7.46 **Implementation Strategy Stage 4**-It assumed that Voice Mail communication shall be supported and that a Voice Mail provider is available. Limitations of Voice Mail provider capabilities need to be considered (e.g. two way communication).

7.7.47 **Implementation Strategy Stage 4**-It is assumed that a speech engine for creation of Voice Mail messages is available.

7.7.48 **Implementation Strategy Stage 4**-The connection and availability of a Voice Mail provider and an appropriate speech engine is regarded a Customer Furnished Item.

7.7.49 **Licensing**-The capacity of the server installation is based on the following assumptions:

a) Up to 50 concurrent users of REM Incident Management Client;

b) Each operator is concurrently working on up to 5 incidents in parallel;

c) Up to 5 concurrent users of REM Data Management Client;

d) Up to 500 concurrent users accessing the REM Web Access Client;

e) Up to 50 concurrent users of REM Mobile Squad Leader App devices; and

f) Up to 80 concurrent users of REM Notification Sender App devices.

7.7.50 **Module Order Form 9 – Data Migration (Data Extraction)**-

a) The Customer shall be responsible for extracting data.

b) The format shall be confirmed in the Detailed Design Phase. In accordance with the Project Schedule.

7.7.51 **Module Order Form 9 – Data Migration (Data Cleansing)**-Data cleansing shall be the responsibility of the Customer.

7.7.52 **Module Order Form 9 – Data Migration (Data Analytics)** –

a) Frequentis shall perform analysis check in the supplied data.

b) Checks shall include: Format check, plausibility check, quality check and checks for completeness.

7.7.53 **Module Order Form 9 – Data Migration (Data Conversion & Migration)**-

a) Frequentis shall be responsible for importing basic levels of data for the Initial Master Data Import.

b) The Master Data itself will have to be supplied by the Customer in the specified format.

If data is required to be amended, this shall be the responsibility of the Customer or System Integrator.

7.7.54 **Module Order Form 9 – Data Migration (Verification with original source)**-Verification and establishing the correctness of data shall be the responsibility of the Customer.

7.7.55 **Module Order Form 9** – Data Migration -Frequentis will perform automated data imports based on the data provided in the structure of the master data excel file which is attached to the HLSD. Data in other formats cannot be imported automatically and no efforts for format transformations are calculated. X hours of data imports are part of the offer. Additional efforts for importing data can be purchased on an T&M basis.

7.7.56 **Module Order Form 9** – Data Migration -Data configurations like the responsibility model, workflow configurations or roles/right management are under the responsibility of ST. This offer includes a certain amount of efforts for support of this data configurations. Additional efforts for supporting data configurations can be purchased on T&M Basis.

7.7.57 **Pricing**-License prices are based on the scoped amount. A discount has been applied given the number of licences specified. If this amount reduces, the discount will not apply.

7.7.58 **CSI-**All other CSI and responsibilities listed in the PIPP.

7.7.59 **Pricing** – Frequentis efforts have been calculated on the efforts agreed in the PIPP delivered in the High Level Solution Design Phase. If efforts are above and beyond the work originally scoped because of reasons including, but not limited to, contributions to new documents and/or other contractor's deliverables, a Contract Change Variation shall be raised.

7.7.60 **Pricing** – Transformational and Change Deliverables were not a part of the original Frequentis scope. The efforts and contribution to these activities needs to be analysed in conjunction with the System Integrator. The additional efforts will require a Contract Change Variation or additional payment arrangement.

7.7.61 **Scop**e – The final definition of what feature is available in which release needs to be defined in the initial workshops.

7A. Implementation

7A.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the parties.

7A.2 Implementation strategy

7A.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

7A.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Deliverable No.9 in sections 5.4.

7B. Project Management

7B.1 Advice and knowledge transfer

Subject to the exclusions in section 7.6, the Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

7B.2 Contractor assistance

If requested, the Contractor must participate all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Initial Requirements, or if amended the Requirements, are accurate and complete; and

b) the Contractor's proposed solution.

7B.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

7B.4 Risk management

7B.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes Delivery Risks,

(**Issues Register**).

7B.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

7B.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 7B.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the Delivery Risks.

7B.4.4 The Contractor must report to the Customer:

a) Any issues or risks (including any Delivery Risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the Delivery Risks, immediately on becoming aware of that change in status.

7B.5 Cooperation with Other Contractors

7B.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Other Contractors in relation to the Project;

b) without assuming any liability for the contents of an Other Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Other Contractors;

c) comply with all other requests of the Other Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Other Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to an Other Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this clause by the Contractor is accurate and to the extent possible, complete.

7B.6 Communication with Other Contractors

7B.6.1 The Contractor must not, without the Customer's prior written consent:

a) give an Other Contractor a direction or instruction which will or is likely to vary the Other Contractor's scope in relation to the Project;

b) give an Other Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Other Contractor in relation to the Project;

c) give an Other Contractor a direction or instruction which will or is likely to delay the time that the Other Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Other Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Other Contractor in relation to the Services or the Deliverables.

7B.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and an Other Contractor, or between Other Contractors, in connection with the Project.

7B.7 Disputes between the Contractor and Other Contractors

7B.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with an Other Contractor by discussion and negotiation without the Customer's involvement.

7B.7.2 Where the Contractor has notified the Customer under section 7B.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

7B.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

7B.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

7B.8 Reliance on Other Contractors' work

The Customer does not warrant the accuracy or correctness of any reports, plans, drawings, documents or information provided by Other Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such reports, plans, drawings, documents or information.

7B.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

7B.10 Delivery Address

7B.10.1 The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

7B.10.2 The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

8. Customer Supplied Items (CSI) and Customer obligations

8.1 CSIs and obligations

8.1.1 Subject to section 8.2, the Contractor acknowledges that the Customer has provided the following CSI items to the Contractor prior to the Contract Date:

a) project scope (as documented in the architecture blueprint);

b) functional requirements (as provided in the RFP);

c) non-functional requirements (as provided in the RFP);

d) draft Implementation & Maintenance Phase PIPP

e) system security requirements;

f) data management strategy;

g) project concept and review;

h) architecture blueprint;

i) systems impacted (existing);

j) interface specifications (where available);

k) technical policies and standards;

l) draft Procure IT (the Customer Contract and this PIPP);

m) ROC organisation structure;

n) ROC program high level roadmap;

o) draft ROC program test management framework;

p) current processes;

q) concept of operations;

r) Transformation and Change Requirements v4.1;

s) ROC Systems Assurance and Planning Framework documents; and

t) ROC Data Architecture High-Level Strategy.

8.1.2 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

8.1.3 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 8.1.1(a) – (t), 8.1.2(a) and 8.2.1.

8.2 CSI Facilities and Equipment

8.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data; and

c) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required data has to be provided in the agreed format and validated.

d) desktops for 15 Contractor Personnel working on Site to the following specification;

e) dual screen;

f) operating System: Windows 7 OS 64 bit;

g) processor: Intel Core i7;

h) memory: 8GB RAM;

i) Hard Disk: 500GB with 7200 RPM minimum or 256 SSD;

j) MS Office 2010/2013 & Outlook;

k) MS Project 2010; and

l) Visio 2010.

8.3 CSI verification

8.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

8.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

8.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

9. Personnel

9.1.1 The Contractor must ensure that each member of the Contractor's Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

9.1.2 Any of the Contractor's Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

9.1.3 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

9.1.4 Nothing in Appendix B affects the scope of the obligations of either party as described in sections 4 and 5 of this PIPP.

10. Subcontractors

10.1 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the Detailed Design Phase workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

11. Approval by the Customer

11.1 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with clause 5 of the Additional Conditions and as per section 5.4 above.

11.2 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

12. Payment Plan

12.1 Contract Price

12.1.1 The Contract Price for the Contractor to complete Detailed Design for all Release 1 of the ROC Program is [redacted] (ex GST).

12.1.2 The Contract Price has been calculated based on the milestones specified in the table below. A breakdown of the Contract Price is as follows:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation Phase and the Detailed Design (Release 1) Phase:			
The Services and Deliverables specified in sections 4 and 5 of this PIPP.	[redacted]	1	[redacted]

Pre-Implementation Phase:			
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase until the end of November.	[redacted]	1	[redacted]
Travel Costs	[redacted]	1	[redacted]
Customisation for ROC - The majority of the customisation efforts can be deferred until 30 November 2015. - Assumes that remaining customisation efforts will be ordered through the implementation contract until the deferred date.	[redacted]	1	[redacted]
License component - The REM product road map is funded by license fees. Without the payment of licenses, the product is unable to be evolved. This amount is required for the features required for the Customer's release 2016.1 and REM Mobile. - Although REM Mobile is not delivered in Release 2016.1 the creation of the iOS version requires additional lead time.	[redacted]	1	[redacted]

12.1.3 The Contractor is to be paid in accordance with the following milestones

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Detailed design deliverables funded as follows:			
	Project Preparation Phase and Detailed Design Phase			
1	Mobilisation payment of 50% (of [redacted]) of the Project Preparation Phase and Detailed Design Phase on or about the Effective Date	[redacted]	1	[redacted]
2	25% (of [redacted]) on 15th September 2015	[redacted]	1	[redacted]
3	25% (of [redacted]) on 15th October 2015	[redacted]	1	[redacted]
	Pre-Implementation Phase			

4	Mobilisation payment of 50% (of [redacted]) of the Pre-Implementation Phase on [execution of the Customer Contract.	[redacted]	1	[redacted]
5	25% (of [redacted]) on 31 January 2016	[redacted]	1	[redacted]
6	25% (of [redacted]) on delivery of Software specified in section 6.4 of this PIPP	[redacted]	1	[redacted]
		Sub-Total:		[redacted]
		Any Other Charges:		
		GST:		[redacted]
	This is the Contract Price (including GST)	**Total Amount:**		[redacted]

12.2 Payment

12.2.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 12.1.3.

12.2.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

12.2.3 The Contractor acknowledges and agrees that, as at the Commencement Date, the Customer has paid the Milestone 1 payment - Mobilisation payment of 50% (of [redacted]) of the Project Preparation Phase and Detailed Design Phase.

12.2.4 In the event that the Final Contract is not executed by 30 November 2015, or the Detailed Design (Release 1) Phase is not extended, the Parties will negotiate, in good faith, stand-down and re-mobilisation costs.

12.2.5 In the event that the Customer does not enter into the Final Contract or terminates the Customer Contract for convenience, the Parties will negotiate, in good faith, the value of the balance of the cost of the Licensed Software which will be payable to the Contractor.

12.2.6 For the purposes of the Customer Contract, the Contract Price specified in section 12.1.3 is the Contract Value.

12.3 Termination for convenience

12.3.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with clause 15 of the Additional Conditions.

12.4 Liquidated Damages

12.4.1 Liquidated Damages will not be applicable for the Detailed Design Phase.

13. Governance

13.1 Authorised Representatives

13.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Mark Pigot; and

b) the Contractor's Authorised Representative is Martin Rampl.

13.2 Management committee

13.3.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Mark Pigot;

b) Stefano Bianchini;

c) Bob Allum;

d) Imola Novak;

e) Martin Rampl;

f) Christian Dorner; and

g) Julian Molzer.

13.3.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

13.3 Management committee function

13.3.1 The function that the management committee is to:

a) review and monitor progress under the Customer Contract; and

b) carry out any other functions stated in Item 16 of the General Order Form.

13.4 Management committee meetings

The management committee must meet no less than once a week during the Project at the times and locations specified by the Customer.

13.5 Management committee progress report

13.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 13.4, provide the Customer with a weekly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

   i. minutes and actions from the last meeting;

   ii. risks and issues;

   iii. details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Initial Requirements

Frequentis Initial Requirements.pdf

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
Detect				
IMS-CAP-001	The ability to integrate with various alarm sources, systems and technology to receive automated alerts. The type of automated alerts is to include but not be confined to: • Service delays received from DTTS, • Signal passed at danger, • Condition Monitoring, • Signal failure, • Points failure, • Overhead wiring failure, • Social media feeds, • Dwell time, • Section running time Lost, • Control system failure, • Technology failure, • Electrical failures / SCADA Network, • CCTV, • Alerts received from other incident management systems. Note: Please refer to NER for details on interfacing standards and technologies	**E**	Configuration	The product has a generic interface for creating incidents based on alerts raised from various upstream systems (e.g. asset monitoring, camera feed, incoming emergency calls, other incident management or condition monitoring systems). Incoming alerts are aggregated in a separate alert monitor view which allows users to create incidents or dismiss alerts.
IMS-CAP-002	The ability to create a network incident notice. Details to be captured for example are: • Issuers name, • Designation, • Contact details, • Relevant factual information, • Asset Information, • Weather (Forecast, actual, variance , actions).	**E**	Out of The Box	The product allows the generation of predefined reports and can export defined incident information to downstream systems as specified in IMS-CAP-044, IMS-CAP-045, IMS-CAP-046, IMS-CAP-047.
IMS-CAP-003	The ability to receive and input manual alerts. For example: • Phone call, • Text, • Email, • Web, • Mobile application. Phone calls are to be: • Recorded and entered into IMS, • Directed to the appropriate staff member. Note: All manually captured information is to be captured as structured data, this may involve prompts and human interaction.	**E**	Configuration	Users can create new incident records based on manual alerts received. Manually captured information can be filled out in the corresponding data fields, while unstructured data can be correlated to incidents as file attachments. REM supports integration with voice recording systems.
Record and Assess				
IMS-CAP-004	The ability to receive Network Incident Notices. For example: A network Incident Notice must be issued as soon as possible when an incident occurs on the rail network, and involves: • Actual or potential loss of life or injury, • Actual or potential damage to or defect in network infrastructure, • Damage to or defect in rail traffic, • Breach of Network Rules or Network Procedures.	**E**	Configuration	Network Incident Notices are treated and processed similarly to incoming alerts in the alert monitor view as specified in IMS-CAP-001, allowing the user to create an incident record based on the Network Incident Notice.
IMS-CAP-005	The ability for users to search and filter alarms. For example filter by: • Type of alarm, • Location of alarm, • Time and date of alarm.	**E**	Configuration	The alert monitor view allows users to filter alerts by type/source, location, time/date.
IMS-CAP-006	The ability to supress automatically created alarms. For example suppress automatically generated alarms, including but not limited to: • all persons/departments (e.g. false alarms), • by individual alarm instance, alarm type and/or department, • during shunting operations, • during manual proceed authorities (non-signalled movements).	**E**	Customisation	The suppression of alarms from alarm source types, e.g. CCTV, or specific sources e.g. a concrete CCTV camera can be configured. The suppression can be configured for a limited time interval. The display of alarms coming from certain alarm source types can be suppressed by the administrator for all users / roles.
IMS-CAP-007	The ability to manually create and update incident records. For example incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	The creation and management of incident records is one of the product's key capabilities. Incident records can follow a predefined template, or follow a configurable workflow consisting of configurable checklists and functional modules.
IMS-CAP-008	The ability to automatically create and update incident records based on predefined business rules. Incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	A newly raised incident is automatically provided with a unique identifier. A title can be suggested based on the incident category, location, Incident ID or other criteria. See IMS-CAP-007 for predefined and custom incident templates.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-009	The ability to automatically record incident details. The details and business rules required to automate the capture of incident details need to be configurable. For example details captured may include: • Users name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (Location of train, geographic location etc.), • Reporting system, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers), • Reference data, • Weather, • Events near by. Note: The details required will change based on the type of incident being recorded. It is envisaged that automatically created incident records will require some level of manual input to capture data elements which are not provided by other integrated systems.	**E**	Configuration	Incident details can be automatically filled or updated based on business rules, e.g. incident type, location and priority based on the alert source; weather data from an external service, affected services based on the incident location and impact etc.
IMS-CAP-010	The ability to manually record incident details. For example user may be prompted as to details required based on: • Users role (by either selecting from list or manually typing), • Type off Incident. Incident details may include: • Users Name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (can be location of train, geographic location etc.), • Reporter, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers) • Reference data • Weather, • Events near by. Note: The details required will change based on the type of incident.	**E**	Out of The Box	Incident details can be captured manually. The specific details are configurable for different incident templates. The product allows the recording of incident details as combo boxes or dropdown lists, radio buttons or checkboxes and text boxes.
IMS-CAP-011	The ability to correlate multiple incident records into a single incident record. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	Out of the box: The product allows the creation of a master incident record for aggregating separate incidents that are tied to or caused by the same event. Duplicate incident records can be cancelled without loss of lawful recording information. Customising: Rules for merging of incidents have to be elaborated together with the customer.
IMS-CAP-012	The ability to prompt users in the correlation incident records based on predefined business rules. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	It is possible to identify incidents that are potentially tied to or caused by the same event based on predefined business rules, such as correlating incident location and category for incidents within a certain configurable time frame.
IMS-CAP-013	The ability to receive a list of affected train services in real time from an external system and associate these with an incident. For example: • Receive a list of affected services associated with a single incident, • Impact the incident had on each service, • The number of passengers travelling on each service, • The time in which the service returned to planned stopping times.	**E**	Configuration	The affected train services can be acquired from the DTTS in real time and can be referenced to the IMS incident. REM out of the box contains an interface to Thales Aramis-D.
IMS-CAP-014	The ability to easily indicate the impact an incident is having on services either manually and / or automatically. For example users may be prompted / supported by the system to capture impact details. Impacts could be to: • Specific runs, • Runs on a line, • Runs passing through a stations, • Cross modal transport, • Stations. Types of impact will include: • Delays, • Cancellations, • Altered stopping patterns, • Change route, • Alternative transport.	**E**	Configuration	The impact of an incident on services can be determined in conjunction with interface data from the DTTS. Out of the box, REM contains an interface to Thales Aramis-D.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-015	The ability to retrieve asset information from an external system in real time. For example: • Sets, • Stations, • Lines, • Overhead wiring, • Signals, • Points, • Assets maintenance schedules (Over due, next planned etc.).	**E**	Customisation	Asset information can be retrieved from an external ERP solution (Ellipse, SAP).
IMS-CAP-016	The ability to view the availability of incident response personnel. For example: • View availability of staff already in operation, • View the availability of standby crew or response personnel, • View the capabilities of crew (i.e. trained to operate which set types), • View contact details, • View current location of staff in operation. Note: Requirement linked to IMS-CAP-026	**E**	Customisation	The product provides a checklist view which allows the assignment of action items to selected personnel. The user is prompted with a selection of incident response personnel, along with contact details, each flagged as available or unavailable. The crew capabilities can be stored as (an) additional attribute(-s) or linked documents. The response team has to acknowledge or deny the task assignment and report the completion of the task. The current location of response teams can be determined by devices allowing GPS tracking. Those devices are not part of the product. Using GPS tracking devices to localize personnel may lead to legal issues.
IMS-CAP-028	The ability to assign / action response team / personnel. For example: Provide assignee with visibility of: • Competence, • Availability of response teams, Provide response teams with: • Notification of action including all details required (fault type, location etc.), • Ability to accept / reject action, • Provide checklist of actions to address.	**E**	Customisation	The assignment of action items to response teams is described in the requirement IMS-CAP-016. Response teams can be provided with incident information and checklists containing action items using the product's Mobile Client. The Mobile Client allows the user to accept or reject actions. Furthermore, incident information can be distributed using the product's outbound communication channels as specified in IMS-CAP-025
IMS-CAP-017	The ability to identify the location of an incident on a geospatial view. For example: • Incidents location in relation to rail network assets, • Location based on the geospatial coordinates of the incident, • Street view, • Aerial view, • Terrains view, • Mark up map with location / notes, • Ability to geo reference, • Identify site / incident access points etc.	**E**	Out of The Box	The location of an incident can be identified and displayed in the integrated GIS View. Additional layers containing rail specific information (e.g. assets, access points, railway tracks and stations,..) or general information (street and terrain view) can be displayed in the GIS View. The integrated GIS view allows the user to automatically focus on the entered incident location.
IMS-CAP-018	The ability to manually add an estimated recovery time to an incident record. For example: • Estimated recovery times, • Estimated response times. Note: This estimate may be based on historic data or user knowledge.	**E**	Out of The Box	It is possible to set estimated response and recovery times for incident records.
IMS-CAP-019	The ability to automatically add an estimated recovery time to an incident based on configurable business rules. For example: • Estimated recovery times, • Estimated response times. Note: It is envisaged these automated estimations will be applied based on historic data.	**E**	Customisation	The product allows a basic configuration of business rules based on a defined number of incident details (e.g. type, weather condition) that automatically add an estimated response and recovery time for incident records.
Select / Define and Activate Response Plan				
IMS-CAP-021	The ability to initiate a workflow in response to creating an incident record. For example: • Initiate relevant workflow / response plans.	**E**	Out of The Box	The product allows the initiation of workflows based on defined business rules. For example, alerting of internal and external response teams, assigning tasks to response teams or an automated information of affected Rail Undertakings.
IMS-CAP-022	The ability to initiate manual predefined response plans. For example: • Provide plans to support Train Controllers or incident personnel in decision making. • Initiate alternate transport plans.	**E**	Out of The Box	Predefined response plans can be initiated as workflow-based checklists that allow the distribution of information to the involved parties.
IMS-CAP-023	The ability to create and initiate ad-hoc response plans. For example: • Create plans to respond effectively to rare / unusual incidents.	**E**	Out of The Box	Custom action items can be added to the checklist during the resolution of the incident. Each action item has a fixed set of attributes (Title, Description, Assignee, Timestamp/Range, Priority). Additionally, REM supports merging response plans for different types of incidents to cover rare and unusual incidents.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-025	The ability to provide notification services to selected personnel For example: • Push based notifications, • Pull based notifications, • Subscription based notifications, • Push media update. Manage notification distribution lists and groups and business rules: • Create, • Read, • Update, • Delete, • Notifications to be distributes in near real time. Note: Notification may include notifying crew / operational staff of CAN warnings (Condition Affecting Network (i.e. Temporary Speed Restrictions) Notifications will also be distributed to management/ executives and other 3rd parties.	**E**	Out of The Box	Outgoing notifications can be manually or automatically sent to various channels, i.e. Short Message Service, email, Voicemail or as push/pull based notification. REM includes a configurable rule engine that determines who has to be informed about which incidents, and using which communication channel. Notification distribution lists can be configured.
IMS-CAP-026	The ability to track and display the location of all response teams / personnel: For example: • Location indicated on a map / geospatial display, • Roster information, i.e. the availability of team / personnel, • Current list of assigned actions assigned. Note: Requirement linked to IMS-CAP-016	**E**	Out of The Box	The integrated GIS View, automatically focusses on the incident location and displays the location of response teams associated data (assigned actions, roster information) in a dedicated layer.
IMS-CAP-027	The ability to view a current list of consumables that a teams / personnel are in possession of. For example: • Consumables required to fix / address a fault, • Tools required to fix / address a fault, • Vehicle type (specific vehicle type may be required to access a fault), • Historical analysis.	**E**	Customisation	The product is capable of displaying specific information (e.g. consumables, tools,…) about incident teams, retrieved from an external source system.
IMS-CAP-029	The ability for mobile personnel capture incident details when responding to a incident. For example: • Response teams capture and provide more details (via forms and checklists), • Reponses teams are able to view the latest details / information captured by other staff members.	**E**	Out of The Box	Response teams can be provided with a mobile client of the product that allows the capturing of incident details.
IMS-CAP-030	The ability to create predefined workflow / check lists for different types of incidents. For example different types of incident groupings will include: • Equipment, • Miscellaneous, • People, • Trains, • Weather Conditions. Note: Different types of incident will require involvement from different personnel and 3rd parties. Ability to: • Create, • Read, • Update, • Delete.	**E**	Out of The Box	Incident categories, workflows and checklists are configurable. Access rights for checklist items can be configured.
IMS-CAP-031	The ability to assign an incident actions manually and / or automatically. For example: Assign incident actions to a: • Business group / division, • Individual staff member. Assigning Incident records / actions to be: • Manual and / or, • Automated based on predefined criteria / metadata. Note: It is envisaged that workflow will have predefined actions and potential business groups / divisions responsible for them however this requirements allows for additional actions to be assigned.	**E**	Customisation	The product allows a rule based or manual assignment of incident actions to selected personnel. Incidents can be assigned to users or roles (corresponding to divisions). A filter functionality allows users to see incidents assigned to them.
IMS-CAP-032	The ability to manually override / skip workflows and checklists. For example authorised user able to depart: • Predefined Workflow, • Predefined Activity, • Predefine Checklist.	**E**	Out of The Box	The product allows workflows, activities and checklists to be skipped or processed in an arbitrary order unless mandatory for the completion of the workflow.
IMS-CAP-033	The ability to manually re-assign a workflow activity to a different individual or role. For example: • Initial assigned user unable to action task.	**E**	Out of The Box	The responsibility for the workflow activity can be changed to a different individual or role.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-034	The ability to distribute response plans to selected personnel electronically. For example via: • Web based application • Mobile application. **Note:** It is envisaged that distribution business rules would be managed as part of workflow.	**E**	Out of The Box	Response plans can be distributed to selected personnel by various communication channels or a web/mobile client.
IMS-CAP-035	The ability to provide a collaborative working environment in which multiple user will have the ability to simultaneously access and update incident details in real-time. For Example internal and external users provided with: • Visibility of incidents via multiple mechanisms: • Video, • Conferencing (calling and video), • Web, • Application based, • Notification, • Phone, • Mobile App, • Ability to provide input / suggestions. These would be managed through role based permissions. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan • Red indicates that required actions for the incident are not tracking to the response plan.	**E**	Out of The Box	The product allows multiple users to simultaneously access and update incident details. Incident information can be made available in the web and mobile client or distributed as outlined in IMS-CAP-025 (Short Message Service, email, Voicemail or as push/pull based notification). An incident overview allows users to track the progress of multiple incidents, allowing a graphical representation as traffic lights.
Track and Escalate				
IMS-CAP-038	The ability to record action(s) within an incident record. For example record action information such as: • Calling emergency services, • Calling operational staff, • Timestamps. The status of an action is monitored on its own and as part of the overall workflow, including but not limited to: • Overall status, • Time-forecast to complete, • Action completed, • Action authorisation (whom, when etc. where applicable), • Incidents and actions are tracked until completion, • Critical issues, • Constraints & Dependencies.	**E**	Out of The Box	Every single action for incident handling is logged and flagged with an automatic system timestamp, which cannot be overwritten. Additionally, the user can manually set a timestamp for specific events during incident handling (which is tracked separately). Otherwise, the timestamp is automatically filled with the current time. The tracked information allows the monitoring of the incident's status, action authorisation and completion as well as derived issues, constraints and dependencies.
IMS-CAP-039	The ability to provide visualisation capabilities to easily assess an incident and the status of its progress. For example: • On a rail schematic map, • On a geospatial map, • Affected service(s), • Related assets/equipment e.g. gates and assets, • Likely impact. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan, • Red indicates that required actions for the incident are not tracking to the response plan, • The ability to display a heat map to visualize or alert over crowding on platforms.	**E**	Customisation	The product allows for the integration of an existing GIS view. A web based GIS view can be integrated in a widget within the incident record detail view or in a separated application window. Given an interface that allows for raising a zoom to location action, the GIS view can automatically focus on the incident location provided by the user. There are various alternatives for integration, that need to be specified in detail in the ECI phase. The GIS View allows for the localisation of an incident, as well as related asset information (if provided by an ERP system as outlined in IMS-CAP-015). The impact on affected services can be determined in conjunction with the DTTS solution and visualised within the GIS view. The incident progress can be tracked as specified for requirement IMS-CAP-038. Overcrowding of a platform in form of heat maps can be visualized in the GIS view, requiring external data. Additionally, the product allows network drive integration to provide specific information (in the form of documents, spreadsheets or checklists) for the relevant railway installations.
IMS-CAP-040	The ability to track the progress / monitor incidents from creation until completion. For example: • Overall status, • Time-forecast to completion, • Action completed, • Action authorisation (who, when etc.), • Assignment information (assigner, assignee, time/date of assignment), • Updates made to the record (new comments, change to 'fields' such as the incident's category, priority etc.), • Internal communications distributed, • Customer Information distributed.	**E**	Out of The Box	All of the exemplary data (i.e. every single action taken within the incident record and interface communication) is fully logged and flagged with an automatic system timestamp.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-041	The ability to manually and / or automatically escalate a activity or task based on a pre-defined business rules. For example: Business rules are to be configurable. Automated escalation based on: • Time boxed activities, (an incident has not 'progressed' (no record update) for a specified timeframe) • Assignee not available. Manual escalation required where: • The incident itself has risen to the next severity level. • An incident has no response plan after a specified timeframe • Category, severity, priority.	**E**	Customisation	The product allows an automatic (rule-based) or manual escalation of incident action items to defined roles or personnel.
IMS-CAP-042	The ability to manually prioritise incident, actions and activities. For example: • Change priority due to severity.	**E**	Out of The Box	The incident's priority can be set in the corresponding data field.
IMS-CAP-043	The ability to filter views and create real-time and post event incident reports. For example: • All current ('open') Incidents, • All Incidents of a given status. Views of an incident can be customised as different staff (e.g. different profile, location, team etc.) will require different information. Ability to export report based data through a standard based interface.	**E**	Out of The Box	The incident list allows custom filters and sorting and can be exported as .csv/.xls.
IMS-CAP-067	The ability to adjust the boundaries which define the areas of responsibility for users. For example: • Train controller boundaries / sectors (Boards), • Response teams areas of responsibility.	**E**	Out of The Box	The product allows the definition of boundaries/areas of responsibility for different roles, based on time and incident location.
IMS-CAP-068	The ability for users to reserve a incident number in the system without having to provide incident details.	**E**	Out of The Box	An incident number can be reserved providing a minimum of mandatory fields specified by the customer.
Close and Report				
IMS-CAP-044	The ability to create electronic record (package) containing all incident record details and its associated / linked data files. For example: Details may include: • Origin of the Alarm / Incident (e.g. source system, user name), • Priority, • Time of alarm, • Incident ID, • Incident Level, • Cause, • Creator, • Impact on customers. • Time and Date. Other linked data may include: • CCTV, • Phone calls recorded, • Emails, • Text message, • PDF, • Photographs.	**E**	Configuration	The product allows the generation of predefined electronic records.
IMS-CAP-045	The ability to provide incident information to other downstream systems in real-time. For example: • Basic incident information, • Impact on services, • Expected restoration times. Note: Impact to trips, line and station would need to be received from DTTS.	**E**	Out of The Box	The product provides a default XML export functionality of incident details.
IMS-CAP-046	The ability to generate defined and ad hoc reports on incident status.	**E**	Out of The Box	The product can generate defined and ad hoc reports.
IMS-CAP-047	The ability to export safety related incident information in real time to an external system. Note: Refer to IMS architecture for interfacing systems.	**E**	Out of The Box	Incident data can be exported to external systems.
IMS-CAP-048	The ability to export incident details to a data warehouse.	**E**	Out of The Box	Incident data can be exported to a data warehouse solution.
IMS-CAP-050	The ability to manage business rules for closing incident records.	**E**	Out of The Box	Business rules for closing an incident can be defined (i.e.status-depenant mandatory fields or action items).
Other Capabilities				

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-051	The ability to create scheduled reports based on predefined criteria. For example: •Annually, Monthly, Weekly, Daily, Adhoc, • Date / Time, • Incident Reports, • OCR Reports, • NIN Reports, • CAN Reports, • AM Peak Composition Reports, • PM Peak Composition Reports, • AM Peak Summary Reports, • PM Peak Summary Reports, • Delayed Crew Reports, • NIN Report - Outstanding, • NIN Report - Date Raised, • Inactive User Reports, • Other reports such as: Ministerial reports, punctuality reports, sick passengers reports, airport line performance reports, maintenance incident reports etc.	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom reports. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required reports. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-052	The ability to manage (C,R,U,D) predefined reporting templates. Note: Business needs are constantly evolving therefore it is envisaged that report templates will need to be updated and new report types will need to be created.	**E**	3rd Party	JasperReports includes a report designer that allows the creation of custom reports.
IMS-CAP-053	The ability to manage (C,R,U,D) reference data. For example: • Import reference date, • Manage the different categories of incidents, • Manage Incident coding (used for attribution), • Asset information, • Stations, • Line, • Sectors, • Fleet types. Ability to: • Create (access / import) • Read, • Update, • Delete, • Export.	**E**	Out of The Box	The product is supplied with a separate Data Management Client which allows the management of reference data.
IMS-CAP-055	The ability to provide access to incident information to mobile / operational staff and 3rd parties external to the ROC. For example the ability to: • Provide real-time access to users and 3rd parties, • Received incident updates from a mobile device, • Ability to create incident notifications, • Provide a mobile collaborative work place, • Optimise data for mobile devices.	**E**	Out of The Box	The product is supplied with a mobile client which provides users with real-time incident information. The mobile client allows response teams to capture incident information or manage action items. The product allows the distribution of incident information via SMS, email and Voicemail.
IMS-CAP-056	The ability to manually and automatically link / attach relevant information to an incident record. For example the ability to link the following types of data to incident records: • CCTV & video footage, • Photographs, • Diagrams, • Pictures, • Phone call recordings, • Documents.	**E**	Out of The Box	Arbitrary attachments can be uploaded in a network drive and linked to the incident record. Links to relevant incident information can be captured in the incident details.
IMS-CAP-057	The ability to create, manage and maintain workflows, templates and checklists. For example: Workflows, Checklist, Templates we require the ability to: • Create, • Read, • Update, • Delete. Workflow capabilities to manage: • Business processes, • Activities (manual and automated), • Deadlines, • Check lists, • Business rules, • Notifications, • Escalations, • User roles, • User permissions, • Process monitoring, • Administration, • Auditing. Note: It's envisaged that some safety / network rules could be incorporated into the workflows either as pointer or guidance or actions.	**E**	Customisation	The product's design philosophy focusses on a time critical response and resolution of incidents. Workflows are represented by configurable checklists and functional modules which control manual and automated activities, notifications and escalations and allow the capturing of incident details. Checklists and functional modules are configurable components that allow the modelling of workflows. Checklists are ordered and displayed depending on incident categories, incident location and time. Business rules can be set for action items in the checklist, for example, to automatically notify users. The product allows an in-depth administration of user roles and permissions. It is possible to monitor the overall progress of multiple incidents in the list view, while details for single incidents can be accessed through the incident view. The product integrates an audit log, which fully traces all activities that have affected at any time a specific operation, procedure, or event (see IMS-CAP-038).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-058	The ability to manage alarm business rules: For example: • Manage Hierarchy of alarms, • Automated suppression rules, • Associated workflows rules, • Notification rules (Colour, frequency, visual, brightness, audio, volume), • Trigger CCTV views. Note: Requirement related to human factors.	**E**	Configuration	Alarm business rules can be managed in the Administration Client.
IMS-CAP-059	The ability to manage the roles and their associated permissions. For example: • Create, • Read, • Update, • Delete. • Roles (for example: Train Controller, Shift Manager), • Groups, (Train Control, Customer Information, Signalling etc.), • Permissions (ability to supress alarm, depart workflow, assign workflow). **Note**: The roles need to be in alignment with and in consideration of roles defined in other systems.	**E**	Out of The Box	Roles, Groups and Permissions can be managed in the Administration Client.
IMS-CAP-060	The ability to filter /search and select incident records for viewing. For example: • Origin (e.g. source system), • Priority, • Time of alarm, • Most recently acknowledged, • Incident ID, • Incident Level, • Cause, • Creator, • Time and Date.	**E**	Out of The Box	The incident list represents a view of all incidents. Those can be can be filtered, searched and sorted by different incident attributes, e.g. incident location, category, time/date, origin,…
IMS-CAP-061	The ability to view or instigate raising or closing of defect records for assets whose defect has caused a delay to services. For example: • View defect records for assets, • Instigate opening defect record for a specific asset / incident, • Instigate closing a defect record for a specific asset / incident. **Note:** Defects are managed in Fault Management Systems.	**E**	Customisation	The IFMS interface allows the viewing, raising or closing of defect records.
IMS-CAP-062	The ability to integrate and share real-time and post event incident information with other systems. For example systems such as: • Customer Information Management System, • Dynamic Timetabling System, • Operational Video Display System (OVDS), • Business Intelligence Systems, • Calculation Engine, • Fault Management Systems, • Safety Management Systems, • External 3rd Party Systems, • Other Incident Management Systems, • Other Computer Aided Dispatch Systems (i.e. ICEMS), • ERP systems, • Geospatial Information Systems (such as Small World), • State emergency services, • Wayside Information Management System (for alarms), • TMC Incident Management Systems, • Train Location Systems / On Time Running (TLS-OTR), • Billing systems . For example information exchange patterns such as: • Bi-directional request & respond, • Pull, • Push. • Receiving incident records from 3rd part incident management systems. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	Incident information can be sent in real-time or based on defined events (e.g. closing/completing an incident), over a variety of channels or services, as specified in IMS-CAP-025. Specific interfaces allow a deeper integration into up- and downstream systems, i.e. CIMS, DTTS, TLS-OTR, FPe, FMBS, CE, Reliance Rail, IFMS, SRS, ERP, GIS, a business intelligence solution, WIMS and 3rd party solutions. See Chapter 8 - "Interfaces" of the document "Understand Requirements_FRQ.pdf" for a detailled interface description.
IMS-CAP-063	The ability to integrate with a day of operation timetabling system. For example: • Receive alerts when services are experiencing delays, • Receive transposition details (i.e. add stop, skipped stop, terminate, cancel run etc.) • Receive lists of services affected, • Provide estimated restoration / recovery times • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the DTTS allows the interchange of incident and alert information (including affected services and estimated restoration and recovery times) and transportation details (SIRI SX, PT and ET).
IMS-CAP-064	The ability to integrate with a Customer Information Management System. For example: • Provide cause impact and advice details, • Provide estimate recovery times. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the CIMS allows the interchange of incident information and recovery times (SIRI SX).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-065	The ability to integrate / display views on a large video display. For example: • Display dashboard type views, • Display GIS views, • Display location of response teams, • Display the location of a incident.	**E**	Out of The Box	It is possible to display the required information on a large video display. The product provides data for dashboard and GIS displays in real time and allows visualisation in a standard browser.
IMS-CAP-066	The ability to support the management of multiple incidents simultaneously. For example: • Different users working on different incidents, • Same users supporting different incidents.	**E**	Out of The Box	It is possible for different users to process different incidents. One user can open multiple incidents for processing at the same time. Multiple users can process a single incident at the same time. The product detects data conflicts and provides different mechanism for their resolution.
IMS-CAP-069	The ability for users to configure their own user preferences. For example: • Set up notifications of interest based on incident type, area of responsibility, • Set up method of notification, text, email etc., • Set up dashboard views. Note: Authorisation and Authentication is covered in the NFR's.	**E**	Out of The Box	Users can configure their personal notification rules and outbound channel in the client application. Personal dashboard views can be configured in the integrated 3rd party component as specified in IMS-CAP-079.
IMS-CAP-070	The ability to manually and automatically attribute further details to incident records. For example: • Who is responsible for root cause analysis, • Who the incident belongs to (Business unit, contract etc.), • Incident Delay Attribution (Late, very late, cancelled etc.), • Incident status (Open, Closed etc.), • Location of a incident, • Force majeure, • Attribution reporting, • Ability for attribution through mobile devices. Note: There are business rules (contractual timeframes) in which externals need to be informed of incident details.	**E**	Out of The Box	Further incident details can be manually or automatically (based on business rules) added to the incident description.
IMS-CAP-071	The ability to trigger viewing of specific CCTV cameras based on predefine alarms and business rules. For example: • Trigger CCTV cameras once a emergency help point has been activated (i.e. on set, on station, in lift etc.), • Trigger CCTV cameras on plats forms that are over crowded.	**E**	Out of The Box	The product is capable of catching alerts from CCTV cameras on predefined events and can display live and recorded video feeds.
IMS-CAP-072	The ability to assist users in managing / arranging alternative transport with 3rd party providers. For example: • Notification, • Booking, • Tracking progress (i.e. ETA), • Communicating with station staff. Note: This requirement is also covered under workflow requirements.	**D**	Out of The Box	3rd party providers for alternative transports can be tied to the product's responsibility model, allowing the user to access booking information or communication with station staff over various outbound channels, based on the incident location. Progress tracking can be assisted with a specific checklist.
IMS-CAP-073	The ability to provide users with visibility of pre-planned special events / track work. For example: • Easter show, • Carols in the domain, • Track work - daily summary reports, • Road, bus, ferry and light rail.	**E**	Configuration	The Administration Client allows the configuration of special events in advance. The User Client can display a list of upcoming events.
IMS-CAP-074	The ability to provide users with access to images, photos and documents to aid in the communication of incident details. For example: • GIS imagery, • Access to reference data, • Ability to edit imagery and distribute updates.	**E**	Configuration	The User Client allows the upload of unstructured data to a network drive folder for the specific incident (see IMS-CAP-056). It is possible to send incident details and file attachments to designated users or user groups. The GIS View provides the user with a toolset for drawing objects into the GIS view and publishing updates to other users.
IMS-CAP-076	The ability to manage (C,R,U,D) meta data for records within the system. For example: • Create, • Read, • Update, • Delete. Meta data examples: Location, Creator, Alarm Type etc.	**E**	Customisation	It is possible to manage meta data for incident records.
IMS-CAP-078	The ability to assist / prompt users to help in the diagnosis of the root cause of a incident / defect.	**E**	Out of The Box	The product aids the user in diagnosing the root cause of the incident. For example by: - checklist-based gathering and display of incident information - detailed information from interfaces to other incident management systems - correlating data from upstream or integrated systems (e.g. relevant assets, incident location details, weather information..) - display of alarm sources

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-079	The ability to manage (C,R,U,D) dashboard views that will be available to users. For example: • Create, • Read, • Update, • Delete. • Flexible filtering and data visualisation, • Shared views, • Views including GIS, • Views including internal and external incident information	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom dashboard views. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required dashboard views. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-080	The ability to provide users with the ability to access and view dashboards For example: • Access given to those who are within ROC, • Access provided via mobile device. • Information on a dashboard is real-time, • Tables, graphs, hot spots, GIS views etc.	**E**	3rd Party	The recommended 3rd party tool (see IMS-CAP-079) provides a browser based dashboard view which allows users to access and view dashboards on a broad range of devices, e.g. large video displays or mobile devices. The product provides those dashboards with real-time data.
IMS-CAP-081	The ability to view a incidents sequence of events in time order in either real-time or post incident. For example: • Real-time replay to help identify what actions have been activated, • Post event replay to learn and improve process and procedure	**E**	Customisation	The product's audit log enables a full reconstruction of the incident sequence. It is possible to provide a replay functionality for displaying the actions taken in the incident resolution.
IMS-CAP-082	The ability to manage (C,R,U,D) a contact management details. For example: • Telephone, email, mobile, address, • Provide access contact details for internal and external 3rd parties, • List of on call response staff. **Note:** This may require integration with existing legacy systems.	**E**	Out of The Box	The product's Administration Client allows management of contact details. The User Client can display corresponding response staff and allows the distribution of contact details.
IMS-CAP-083	The ability to simulate how a incident recovery may unfold. For example: • Based on actions assigned, • Based on historical information (provide improved estimated response / recovery times), • Based on feedback received from end users.	**I**	Customisation	It is possible to implement a rule set that allows a simulation of the actual incident resolution based on incident details (estimated response and recovery times and assigned actions).
IMS-CAP-084	The ability to view and monitor resource constraints. For example: • Monitor availability of resources, • Monitor shift start and end times, • Access competence levels. Note: This will be useful information prior to dispatching the relevant resources to assist in the recovery of a incident.	**E**	Out of The Box	The product is capable of displaying available response teams as outlined in IMS-CAP-028. Shift start and end times as well as competency levels of resources can be managed in the Administration Client
IMS-CAP-085	The ability for the system to dynamically learn and improve processes based on historic data. For example: • Ability to change activities based on timeframes, • Ability to suggest alterations to predefined support plans due to identified bottle necks.	**I**	Future	
IMS-CAP-086	The ability to capture incidents for existing incident management systems. i.e. Act as the single point in which all incident records are created. Note: It is envisaged that IMS will become the single point in which incident records are created. After which IMS will pass the incident records down to the existing incident management systems. For example: • IFMS, • SRS, • FMS.	**E**	Customisation	The product will integrate with the existing incident management systems for cross referencing incidents, sharing incident information or raising and closing incidents.

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
Accessibility			
NFR-ACC-001	The component/(s) shall be accessible via standards based browser environment or thin client, for example: • Remote Desktop Protocol (RDP) • Citrix	**E**	Out of the Box
NFR-ACC-002	The component/(s) shall be accessible remotely to 3rd parties, based on business rules and appropriate permission, for example: • Transport Management Centre • New South Wales Police Force	**I**	Out of the Box
NFR-ACC-003	The solution shall enable the dynamic reconfiguration of workstations to meet operational demand, interacting with the necessary infrastructure and telecoms systems to enable communications and control authorisation to move with a workstation.	**E**	Out of the Box
Auditability			
NFR-AUD-001	The solution shall provide the ability to tailor audit requirements by component. The audit logs shall contain at least the following security relevant information: • identification and authentication of users • date and time that the event occurred and was recorded • source system, device or application, e.g. IP address, application, or assigned name • type of action, for example include authorise, create, read, update, delete and accept network connection • before and after values when action involves updating a data element • any status, response or errors values generated as a result of the event or activity.	**E**	Out of the Box
NFR-AUD-002	The solution shall provide the ability to tailor audit requirements by component. The events to be recorded in activity and/or audit logs need to include but not necessarily be limited to: • start up and the stopping or shutdown of: o applications and databases o operating systems, including servers o infrastructure components such as firewalls, routers and switches • connection initiation, establishment and termination, including: o source and destination address o desired or requested service • information received from external interfaces as well as information dispatched to other systems • errors that occur in any infrastructure, operating system or application component • successful activities initiated by all individuals, whether authorised or not • changes to production systems and applications • relevant application and/or process/thread activity • creation, modifying, deleting and disabling or revoking of user permissions and access • records created by security systems such as anti-virus/malware tools, IDS/IPS (Intrusion Detection Systems / Intrusion Prevent Systems), firewalls and access/identity management tools	**E**	3rd Party
NFR-AUD-003	The solution shall ensure audit logs are stored and maintained in accordance with the relevant security classification level assigned to the log information, in an un-editable format based on date and/or other recorded audit details to be specified.	**E**	Out of the Box
NFR-AUD-004	The solution shall ensure the audit logs shall be stored in a device separate to the device or application that created the logs. This is to: • minimise the potential for deliberate corruption or unauthorised deletion of logs • permit the use of shared logging infrastructure, including integrity mechanisms, minimising cost overheads and chronologically synchronising logs • improve the ease of correlating events across applications, systems and infrastructure.	**E**	Out of the Box
NFR-AUD-005	The solution shall be designed and implemented to minimise the recording of sensitive or personal identifying information in logs and audit trails unless such detail is necessary for specific business or operational reasons.	**E**	Out of the Box
NFR-AUD-006	The solution shall provide functionality to interrogate audit logs and raise alerts on critical and suspicious activity.	**E**	Out of the Box
NFR-AUD-007	The solution shall provide the ability to restrict access to audit logs, to system and appropriately trusted application administration and support staff.	**E**	Out of the Box
NFR-AUD-008	The solution shall provide Auditors direct access to the audit system to view audit logs and/or the ability to export to a reporting engine.	**E**	Out of the Box
NFR-AUD-009	The solution shall record all access of audit logs. These log records in turn require protection as per NFR-AUD-003 to NFR-AUD-008	**E**	Out of the Box
NFR-AUD-010	The solution shall ensure logging facilities and log information are protected against tampering.	**E**	Out of the Box
NFR-AUD-011	The solution shall support variable retention policies for audit logs, dependent upon Sydney Trains Log Retention Policy "ICT-SGD-70107 Logging".	**E**	Out of the Box
Availability			
NFR-AV-003	The component/(s) shall ensure that the installation of patches / hot fixes etc do not require the system to be taken down or reboot.	**E**	Configuration
NFR-AV-004	The component/(s) shall seamlessly operate across multiple physical data centres.	**E**	Out of the Box
Interoperability			
NFR-IO-001	The component/(s) shall support the following transport data interchange standards: - GTF/GTFS-R - SIRI (v1.3 +)	**E**	Customisation
NFR-IO-002	The component/(s) shall support the extraction of data based on ETL standards.	**E**	Out of the Box
NFR-IO-003	The component/(s) shall support interfacing with email systems supporting SMTP.	**E**	Out of the Box
NFR-IO-004	The component/(s) shall be compatible with common desktop browsers, for example: • Internet Explorer (*note: v8.0 is currently deployed within Sydney Trains*) • Safari • Chrome • Firefox	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-IO-005	The component/(s) shall be compatible with common mobile browsers, for example: • iPhone/iPad • Android • Blackberry	**E**	Out of the Box
NFR-IO-006	The component/(s) clock shall be synchronised with the definitive master clock.	**E**	Out of the Box
Maintainability			
NFR-MNT-001	The component/(s) shall support Sydney Trains backup rotation requirements without the need to restrict end user access.	**E**	Out of the Box
NFR-MNT-004	The Disaster Recovery system shall ensure all audit logs are backed up on a regular basis.	**E**	Out of the Box
NFR-MNT-009	The component/(s) shall provide an automatic way of migrating the data of existing database in case of data structure change during transfer to new versions.	**E**	Out of the Box
NFR-MNT-010	The component/(s) shall provide the ability to revert to a previous release.	**E**	Out of the Box
NFR-MNT-011	The component/(s) shall ensure support activities can be completed remotely to reduce operational interruption.	**E**	Out of the Box
NFR-MNT-012	Maintenance task / service activities must be able to be completed without operational interruption.	**E**	Out of the Box
Manageability			
NFR-MGN-001	The component/(s) shall support systems management standards such as SNMP.	**E**	Out of the Box
NFR-MGN-002	Critical errors (e.g. back up failure) that occur within the component/(s) shall provide warning message to the system administrator (e.g. via SMS, email). These alarms must raise an incident within the Sydney Trains Incident Management System.	**E**	Out of the Box
Performance			
NFR-PER-001	The component/(s) shall provide a response time for all functions (e.g. application loading, screen open and refresh times) below 2 seconds under peak loads. All components should have a fit for purpose response time.	**E**	Out of the Box
NFR-PER-002	The component/(s) shall have the ability to not impact system performance while auditing and monitoring of usage.	**E**	Out of the Box
Portability			
NFR-PO-001	In the event of a requirement to apply a patch/upgrade, the component/(s) shall automatically port any customisation authorised by the application supplier.	**E**	Out of the Box
NFR-PO-002	The component/(s) shall support ease of migration to new technology (hardware or software) as and when it becomes available to the market.	**E**	Out of the Box
Reliability			
NFR-REL-001	The component/(s) shall provide the ability to retain all electronic files, at least until confirmation of a successful exchange / transfer process. This is a procedural safeguard, to ensure that records are not deleted before successful exchange / transfer is reported from the recipient.	**E**	Out of the Box
Reporting			
NFR-RPT-001	The component/(s) shall support standards based printers, formats, page sizes, for example: • A0 for zigzags.	**E**	Out of the Box
Scalability			
NFR-SCA-001	The component/(s) shall support simplicity of scaling options both horizontally and vertically, for example add more users to a node, add more nodes.	**E**	Out of the Box
Security			
NFR-SEC-001	The component/(s) shall support integration with Sydney Trains' Identity and Access Management component/(s) (Oracle) to perform authentication. Sydney Trains authentication process uses Single Sign On / Same Sign On standard (e.g. provide single sign on access to component/(s) once a user is logged on to the Sydney Trains network (via a Sydney Trains computer or a VPN). Content classified as 'Protected' will require the user to provide their user name and password to access it.	**E**	Configuration
NFR-SEC-002	The component/(s) shall support LDAP authentication.	**E**	Out of the Box
NFR-SEC-003	The component/(s) shall support that USER_ID's are only used to identify and reference users and not as proof of identity or authentication mechanism.	**E**	Out of the Box
NFR-SEC-004	The component/(s) shall support access control checks, if a web application, to access protected URL, must not be bypassable by a user that simply skips over the page with the security check.	**E**	Out of the Box
NFR-SEC-005	The component/(s) shall ensure, if a web application, administrator access through the front door of the site is not possible.	**E**	Out of the Box
NFR-SEC-006	The component/(s) shall provide the ability to apply a Segregation of Duties (SoD) matrix for roles and responsibilities, which is easily updated via an administrator user interface. This may include • access levels (role based, field level, category/content) • password requirements - length, special characters, expiry, recycling policies • inactivity timeouts – durations, actions • re-authentication after timeout.	**E**	Out of the Box
NFR-SEC-007	The component/(s) shall provide the ability to provide risk and SoD analysis at user, role, transaction, and authorisation object field value levels.	**I**	Customisation
NFR-SEC-008	The component/(s) shall provide the ability to simulate user role changes, in order to identify hidden risks at the user level, before the introduction of a user change.	**I**	Customisation
NFR-SEC-009	The component/(s) shall provide the ability to enable automation of identification of SoD conflicts at each user level, together with the ability to generate and distribute reports detailing SoD conflicts and mark those that have an approved exception.	**I**	Customisation
NFR-SEC-010	The component/(s) shall support a "change password" function, whereby users are required to provide both their old and new password when changing their password.	**E**	Out of the Box
NFR-SEC-011	The component/(s) shall ensure, if a web application, authentication and session data is not submitted as part of a GET, POST should always be used instead.	**E**	Out of the Box
NFR-SEC-012	The component/(s) shall provide the ability to automatically notify designated security administrators of unauthorized access or attempted access and record in a log with reporting.	**E**	Out of the Box
NFR-SEC-013	The component/(s) shall not indicate whether it was the username or password that was wrong if a login attempt fails.	**E**	Out of the Box
NFR-SEC-014	The component/(s) shall inform users, if a web application, of the date/time of their last successful login and the number of failed access attempts to their account since that time.	**E**	Out of the Box
NFR-SEC-015	The component/(s) shall ensure, if a web application, authentication pages are marked with all varieties of the no cache tag to prevent someone from using the back button in a user's browser to back up to the login page and resubmit the previously typed in credentials. Many browsers now support the "autocomplete=false" flag to prevent storing of credentials in autocomplete caches.	**E**	Out of the Box

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NON-FUNCTIONAL REQUIREMENTS			
NFR-SEC-016	Remote access to the ROC components by third party users including Service Providers (e.g. remote system managers, developers. technical support etc.) can only be done by: • Corporate Virtual Private Network (F5-Firepass).	**E**	Out of the Box
NFR-SEC-017	The servers running ROC systems should be isolated on a separate network segments in order to prevent attackers from using them as a platform for mounting attacks on systems in other segments and vice versa.	**E**	Out of the Box
Usability			
NFR-USE-001	The component/(s) shall be designed to minimise cognitive load. Use of configurable audible alarms and visual stimulus must be designed to entice an appropriate response and to differentiate between critical and non-critical events (to be determined by business rules).	**E**	Out of the Box
NFR-USE-002	The component/(s) shall ensure alerts are distinctive, sufficiently loud (at least 5dB(A) above ambient noise level), of an appropriate frequency range (between 500Hz to 3000Hz) and shall not disturb or be confused with other operators alerts.	**E**	Out of the Box
NFR-USE-003	The component/(s) shall provide the ability to change character size, font, contrast and colour of displays to: • allow for the use of more or larger monitors • maximise viewing distance • reduce focal convergence for operators (related to eye strain) • reduce the impact on the operator of heat from monitors.	**E**	Configuration
NFR-USE-004	The component/(s) shall provide the ability for Administrators to perform configuration tasks without customisation and vendor support. These tasks may include: • maintain all value lists • maintain all field labels • maintain data filters • maintain workflows • maintain reports • hide/show and reorder columns • add data filters.	**E**	Configuration
NFR-USE-005	The component/(s) shall provide the ability for Administrations to add more fields to the data input screens for capturing additional business specific information without having to write any code. These fields shall be configured without creating additional tables or without the additional effort of referencing the new fields to the existing fields on the screen. The user shall also be able to define the data type and the data length of the additional fields without having to write any code.	**I**	Configuration
NFR-USE-006	The component/(s) shall have unified, easy, flexible and user friendly interface enabling, for example, the following settings: • personal user menu • personal user settings • field placement on screen • field composition on screen.	**E**	Customisation
NFR-USE-007	The component/(s) shall support multiple screen sizes and resolutions. Minimum display resolution shall be 1280x1024 pixels (design aim of 1600x1200).	**E**	Out of the Box
NFR-USE-008	The component/(s) shall not reduce workspace area if Branding were applied to that component.	**E**	Out of the Box
NFR-USE-009	The component/(s) shall provide online help which is contextual and target the Sydney Trains users.	**I**	Out of the Box
NFR-USE-010	The component/(s) shall ensure all user interfaces have an Australian locale, for example dates displayed in Australian format dd/mm/yyyy, dictionaries Australian, etc.	**E**	Out of the Box
NFR-USE-011	The component/(s) shall be consistent with common interface conventions and best practices, for example: • support minimal keystrokes/typing (e.g. provide reference data via drop down list opposed to free text fields) • quick, simple and user friendly	**E**	Out of the Box
NFR-USE-012	The component/(s) shall perform all functions with keyboard support (mouse is not mandatory).	**D**	Out of the Box
NFR-USE-013	All component/(s) shall be homogenous with respect to keyboard use, screen layout and menu operations with Graphic User Interface (GUI) support.	**D**	Out of the Box
NFR-USE-014	The component/(s) shall have facility to display confirmation / warning windows, for example deletes, changes.	**E**	Out of the Box
NFR-USE-015	The component/(s) shall be able to gracefully handle any feasible set of inputs, any errors that can be generated by internal components such as system calls, database queries, or any other internal functions. For example: • when errors occur, the site should respond with a specifically designed result that is helpful to the user without revealing unnecessary internal details • error messages must be produced in meaningful, plain English, and logged so that their cause can be reviewed.	**E**	Out of the Box
NFR-USE-016	The component/(s) shall include progress indicators while performing functions greater than 2 seconds.	**E**	Out of the Box

Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Julian Molzer	Project Manager	• Overall successful performance of the project within schedule and budget
Bjoern Brunner	Solution Architect	• Successful technical performance of the project within schedule and budget
Thomas Puchegger	Quality Manager	• Assurance of the required reliability, quality aspects of safety issues and quality of the deliverable contract items
Thomas Puchegger	Configuration Manager	• Identification, directioning and co-ordination of the CM activities and performing the CM functions within the project in line with the Contractor's configuration management procedures
Juergen Floetzer	Safety Manager	• Ensuring that all safety/ security requirements derived from the applicable regulation are met. Preparing, providing and maintaining all the relevant Safety Documentation and Information.
Armin Steinwandter	Solution Consultant	• Business process analysis, support Requirements Engineering, interface to product management and development
Alexander Bruckner	Product SW Lead	• Software configuration and development in response to the requirement specifications
Bjoern Brunner	Requ. & Test Manager	• Co-ordination of all requirements engineering and test activities for the project; preparation of all acceptance test activities
Daniel Turner	Test Engineer	• Support Test Manager (creating, performing test cases, test documentation)

Daniel Turner	System Engineer	• System Installation / Integration
Alistair McGill	Account Manager	• Responsible for customer relationship management
Martin Rampl	Commercial Manager	• In charge of negotiating the contract and all modifications thereto on the part of the contractor
Simon Ladinik	Service Delivery Manager	• Ensuring the quality services are delivered with regard to the agreed SLA. Providing detailed reporting as per an agreed schedule

2 Customer roles and responsibilities

Name	Role	Responsibility
Mark Pigot	Technology Team Manager	Management of the Technology Team
Stefano Bianchini	Lead Architect	Oversight of Technical Design for ROC Program
Bob Allum	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Imola Novak	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
As required	Sydney Trains Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

These are draft dates and are subject to change upon mutual agreement between the Contractor and the Customer.

Phases to deliverables	Baseline End Date
1. Updated High Level Solution Design (HLSD)	16th October 2015
2. IMS Architecture Specification	27th October 2015
3. IMS Functional Specification	27th October 2015
4. IMS Non-Functional Design	27th October 2015
5. IMS Integration Specification	27th October 2015
6. Project Communication Plan for IMS Release	4th September 2015
7. IMS Data Management Plan	11th September 2015
8. IMS Data Technical Analysis Outputs	27th October 2015
9. Updated Implementation Strategy	22nd September 2015
10. Implementation Plan	1st October 2015
11. Technology Test Strategy	11th September 2015
12. Updated Project Management Plan	14th September 2015
13. RACI	28th August 2015
14. Frequentis Agreed implementation and Support Contract	25th September 2015
15. Frequentis Detailed implementation & Maintenance Support Contract (PIPP)	24th September 2015
16. Updated IMS Product Gap Analysis (HLTBR)	28th October 2015
17. Updated IMS Product Gap Analysis(DBR)	28th October 2015
18. IMS System Test Plan	15th October 2015
19. Requirement's Traceability Matrix for IMS Release 1	15th October 2015
20. Technology Environment Management Strategy	18th September 2015
21. Operating Model	29th September 2015
22. Draft recommended ROC Organisational Structure	30th September 2015
23. Change Impact Analysis (Release 1)	9th October 2015
24. IMS Training Needs Analysis	23rd October 2015
25. REM 2016 R1 Licensed Software	30 April 2016

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

The overall risk management process to be applied can be summarised in the figure below.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

Appendix E - Acceptance Form.do

FREQUENTIS MILESTONE ACCEPTANCE

CLIENT NAME :	**Sydney Trains**
CONTRACT :	
PROJECT :	

Milestone Details

The following Milestones have been met under the above project:

Milestone/ Deliverable	Evidence	Date Provided/Met

The above Milestones/ Deliverables have been provided/ met :

Signature _____

Project Director _____

Date _____

On Behalf Of Frequentis Australasia Pty Ltd

Signature _____

Program Manager _____

Date _____

On Behalf Of Sydney Trains

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The “doer” creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one “A” can be assigned to an action. Also known as the "Owner” of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. “In the Loop”
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. “Keep in the Picture”

Phase	Document Name	Contractor	System Integrator	Customer
Detailed Design (System Integrator and Contractor)	**Release 1**			
	Updated High Level Solution Design	R	A,R	C
	Release 1 Architecture Specification	R	A	C
	Release 1 Functional Specification	R	AR	C
	Release 1 Non-Functional Design	R	AR	C
	Release 1 Integration Specification	R	A,R	C
	Project Communication Plan for Release 1	**C**	A,R	C
	Operating Model	R	A	C
	Change Impact Analysis (Release 1)	R	A,R	C

	Release 1 Training Needs Analysis	R	A,R	C
	Drafting a recommended ROC Organisational Structure	R	A,R	R
	Release 1 Product Gap Analysis	R	A	I
	Release 1 Data Management Plan	R	A	C
	Release 1 Data Technical Analysis Outputs	R	A	R
	Updated Implementation Strategy	R	A	C
	Release 1 Implementation Plan (Draft)	R	A	C
	Technology Test Strategy	R	A	C
	Updated Project Management Plan	R	A,R	C
	RACI	C	A,R	C
	Agreed Final Contract	I	A	R
	Detailed Implementation & Maintenance Phase PIPP	I	A	R
	Release 1 System Test Plan	A	R	C
	Requirements Traceability Matrix updated for Release 1	R	A,R	C
	Technology Environment Management Strategy	R	A,R	C

Appendix G – Acceptance Criteria

Approval Criteria for Project Preparation Phase

The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

Approval Criteria for Detailed Design (Release 1) Phase

Standard List of Approval Criteria

The Approval Criteria for the following Deliverables of Detailed Design (Release 1) Phase are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase;

b) where the Deliverable is a document, that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (section 5.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design Phase, following the completion of the initial Customer/ Contractor workshops.

The Deliverable shall be deemed fit for purpose when all criteria expressed above have been met.

PROCURE IT FRAMEWORK

VERSION 3.1

PART 3: DICTIONARY

1. AGREED TERMS & INTERPRETATION

AGREED TERMS

1.1 **Acceptance Criteria** means the criteria to be applied in the performance of any Acceptance Test.

1.2 **Acceptance Test Notification Period** means a period of 3 Business Days from the end of the Acceptance Test Period, or such other period stated in Item 32 of the General Order Form or agreed in writing, within which the Party conducting the Acceptance Test must provide the other Party with written notice of the result of the Acceptance Test.

1.3 **Acceptance Test Data** means the data that is provided by the Customer, and agreed by the Contractor in Item 32 of the General Order Form, that reflects the data the Customer will use in the Deliverable, that is to be used for Acceptance Testing.

1.4 **Acceptance Test Period** means the period for the performance of any Acceptance Tests for any Deliverable which is a period of 10 Business Days from the delivery of the Deliverable to the Customer, or such other period stated in Item 32 of the General Order Form or agreed between the Parties in writing.

1.5 **Acceptance Tests** means any acceptance tests stated in Item 32 of the General Order Form or agreed in writing.

1.6 **Actual Acceptance Date** or **AAD** means the date the Deliverable is accepted or is deemed accepted by the Customer and occurs on the date stated in clause 10.1 of the Customer Contract.

1.7 **Additional Conditions** means any terms or conditions which vary, or are additional to, the terms and conditions set out in the Customer Contract, which are stated in Item 43 of the General Order Form and, which if they include a variation to a Protected Clause, that variation requires the approval of the Director General, NSW Department of Finance and Services in accordance with clause 3.2(b) of the Customer Contract (Part 2).

1.8 **Agency** means:

(a) a body corporate or an unincorporated body established or constituted for a public purpose by Commonwealth, State or Territory legislation, or an instrument made under that legislation (including a local authority);

(b) a body established by the Governor-General, a State Governor, or by a Minister of state of the Commonwealth, a state or a Territory; or

(c) an incorporated company over which the Commonwealth, a State or a Territory exercises control.

1.9 **Agreement Documents** means the documentation listed in Schedule 2 to the Customer Contract (Part 2).

1.10 **Annexure** means a document that is incorporated into, and forms part of, the Head Agreement.

1.11 **Approved Agent** means any entity that is authorised in writing by the Contractor to act as the Contractor's legal agent for the purpose of supplying Products and/or Services to the Customer under a Customer Contract, and whose identity is:

(a) stated in the Head Agreement Details or otherwise approved by the Contract Authority; or

(b) where there is no Head Agreement, approved by the Customer,

but excludes the directors, officers or employees of the Approved Agent.

1.12 **Authorised Representative** means a person who has authority to act on behalf of a Party in accordance with the Head Agreement (Part 1) or the Customer Contract (Part 2) (as applicable).

1.13 **Bespoke User Documentation** means documents created for the Customer as a Deliverable under a Customer Contract that describe the features and functions of a Product or Service that has been created, modified or adapted for the Customer under a Customer Contact, in a hard copy, electronic or online format as stated in the Contract Specifications.

1.14 **Business Contingency Plan** means a plan detailing the nature and scope of the business contingency services to be provided by the Contractor to overcome interruptions to the Customer's business, including as applicable, information about time-frames, scheduling, service levels, methodologies, systems, processes or programs for the implementation of such services and any other requirement, as stated in Item 24 of the General Order Form.

1.15 **Business Day** means any day that is not Saturday, Sunday or a public holiday in New South Wales.

1.16 **CCA** means the *Competition and Consumer Act* 2010 (Cth).

1.17 **Change in Control** means a circumstance in which control is or may be exercised over the Contractor:

(a) by virtue of the change of a direct holding of at least fifteen percent of the voting shares in the Contractor or a holding company of the Contractor; or

(b) by any other means whatsoever.

1.18 **Change Request** means a change requested by either Party which, if signed by the Parties will result in a variation to any part of the Customer Contract.

1.19 **Commencement Date** means:

(a) the Commencement Date stated in Item 10 of the General Order Form; or

(b) if no Commencement Date is stated in the General Order Form, the date the Customer Contract is signed by the Customer and the Contractor.

1.20 **Confidential Information** means information that:

(a) is by its nature confidential; or

(b) is communicated by the disclosing party to the confidant as confidential; or

(c) the confidant knows or ought to know is confidential; or

(d) relates to:

(i) the Products and Services;

(ii) the financial, the corporate and the commercial information of any Party;

(iii) the affairs of a third party (provided the information is non-public); and

(iv) the strategies, practices and procedures of the State and any information in the Contractor's possession relating to the State public service,

but excludes any information which the confidant can establish was:

(v) in the public domain, unless it came into the public domain due to a breach of confidentiality by the confidant or another person;

(vi) independently developed by the confidant; or

(vii) in the possession of the confidant without breach of confidentiality by the confidant or other person.

1.21 **Conflict of Interest** means the Contractor engaging in any activity, or obtaining any interest, whether pecuniary or non-pecuniary, which is likely to, has the potential to, or could be perceived to, restrict the Contractor from performing its obligations under the relevant Part in an objective manner.

1.22 **Consequential Loss** means any loss, damage or expense recoverable at law:

(a) other than a loss, damage or expense that would be suffered or incurred by any person in a similar situation to the person suffering or incurring the loss, damage or expense; or

(b) which is a loss of:

(i) opportunity or goodwill;

(ii) profits, anticipated savings or business;

(iii) data; or

(iv) value of any equipment,

and any costs or expenses incurred in connection with the foregoing.

1.23 **Contract Authority** means the head of a government agency which may procure goods and services for that agency or for other government agencies consistent with any applicable policies and directions of the Procurement Board and the terms of its accreditation (if any) by the Procurement Board, and described in Item 2 of the Head Agreement Details.

1.24 **Contract Period** means the period of the Customer Contract stated in Item 10 of the General Order Form, including any period or periods of extension of the Customer Contract made in accordance with clause 2.4 of the Customer Contract (Part 2).

1.25 **Contract Price** means the total of all Prices payable by the Customer to the Contractor for the Deliverables supplied under the Customer Contract as stated in Item 11 of the General Order Form.

1.26 **Contract Specifications** means the totality of any technical or descriptive specifications of functional, operational, performance or other characteristics required of a Deliverable provided by the Contractor under the Customer Contract being only:

(a) any specifications stated in the Customer Contract in Item 13 of the General Order Form; or

(b) if no specifications are set out in the Customer Contract, the User Documentation.

1.27 **Contract Value** means:

(a) the amount that is the maximum amount that the Customer is legally required to pay to the Contractor for the relevant:

(i) Non-Recurring Service and/or Product; or

(ii) Short Term Recurring Service,

under the Customer Contract, calculated at the Commencement Date; or

(b) if the Parties determine that the amount in (a) is not capable of calculation, and there is an Estimated Contract Price for the relevant Non-Recurring Service or Product or Short Term Recurring Service, the Contract Value is the greater of:

(i) the Estimated Contract Price for the relevant Non-Recurring Service or Product or Short Term Recurring Service; or

(ii) the amounts paid by the Customer, or unpaid but due and outstanding, for the relevant Non-Recurring Service or Product or Short Term Recurring Service as at the date on which the claim first arises; and

(c) if the Parties determine that the amount in (a) is not capable of calculation, and there is no Estimated Contract Price for the relevant Non-Recurring Service or Product or Short Term Recurring Service, the Contract Value is the aggregate of:

(i) the amounts paid by the Customer, or unpaid but due and outstanding, for the relevant Non-Recurring Service or Product or Short Term Recurring Service as at the date on which the claim first arises; and

(ii) the average amount paid by the Customer in each month of the Contract Period for the relevant Non-Recurring Service or Product or Short Term Recurring Service prior to the date on which the claim first arises multiplied by the number of remaining months of the Contract Period during which the relevant Non-Recurring Service and/or Product or the Short Term Recurring Services were to be provided, as set out in the Order Documents.

1.28 **Contract Variation** means a variation to the terms and conditions of the Customer Contract that requires the consent of the Director General, NSW Department of Finance and Services in accordance with clause 26.2 of the Customer Contract (Part 2).

1.29 **Contractor** means the person or body corporate named in Item 3 of the Head Agreement Details and/or Item 4 of the General Order Form that enters into the relevant Part. For the purpose of a Customer Contract, Contractor includes any Approved Agent who enters into the Customer Contract. Contractor does not include any of the Contractor's Personnel (other than an Approved Agent).

1.30 **Contractor Information** means information relating to:

(a) the Head Agreement and any Customer Contract formed under the Head Agreement subject to the exclusions stated in Item 5 of the Head Agreement Details;

(b) the Contractor's performance under the Head Agreement or a Customer Contract;

(c) the financial position or reputation of the Contractor; and/or

(d) the shareholdings in the Contractor, or the corporate structure, directorship or shareholdings of the Contractor,

but excluding any of the Contractor's Confidential Information or Intellectual Property Rights.

1.31 **Correctly Rendered Invoice** means an invoice that is rendered in the form of a Tax Invoice where:

(a) the amount claimed in the invoice is due for payment and correctly calculated in Australian dollars;

(b) the invoice is set out as an itemised account, which identifies the GST exclusive amount, the GST component and the GST inclusive amount and enables the Customer to ascertain what the invoice covers and the amount payable;

(c) the invoice is accompanied by documentary evidence that signifies that acceptance (where appropriate) has occurred in accordance with the Customer Contract; and

(d) the invoice is addressed to the officer stated in Item 6 of the General Order Form to receive invoices.

1.32 **Customer** means the person or body corporate named in Item 1 of the General Order Form that enters into a Customer Contract with the Contractor. Customer does not include any of the Customer's Personnel.

1.33 **Customer Contract** means those Parts, terms and conditions and other documents listed in clause 3.6 of Part 2.

1.34 **Customer Supplied Item** or **CSI** means the items set out in Item 22 of the General Order Form to be supplied by the Customer under a Customer Contract.

1.35 **Cyberterrorism** means an assault on any electronic communications network.

1.36 **Defect** means a fault, error, failure, degradation, deficiency or malfunction that causes the relevant Deliverable not to meet the Contract Specifications and other requirements under the Customer Contract.

1.37 **Defects List** means a written notice stating details of the actual results of the Acceptance Test, and for any alleged defect(s) in the specific requirement(s) of the Customer Contract that is not met and a statement as to whether the alleged defect is Minor. The Defects List is not required to include the cause of the defect.

1.38 **Deliverable** means any Product, Service or output from any Service that is required to be provided to the Customer under the Customer Contract.

1.39 **Document** includes:

(a) any paper or other material on which there is writing;

(b) any paper or other material on which there are marks, figures, symbols or perforations having a meaning for persons qualified to interpret them;

(c) any article or material from which sounds, images or writings are capable of being reproduced with or without the aid of any other article or device; and/or

(d) a piece of text or text and graphics stored electronically as a file for manipulation by document processing software.

1.40 **Due Date** means the date by which an LD Obligation must be met, as stated in Item 21 of the General Order Form.

1.41 **Eligible Customer** means any NSW Government Body or Eligible non-Government Body.

1.42 **Eligible non-Government Body** means a public body being eligible to buy under a specific Head Agreement, including the following bodies (as identified under the Public Works and Procurement Regulation 2014 clause 6:

(a) a private hospital;

(b) a local council or other local authority

(c) a charity or other community non-profit organisation;

(d) a private school or a college,

(e) a university;

(f) a public authority of the Commonwealth, any other State or Territory;

(g) a public authority or of any other jurisdiction (but only if it carries on activities in this State);

(h) any contractor to a public authority (but only in respect of things done as such a contractor);

1.43 **Escrow Agreement** means an agreement under which an independent third party receives the source code or object code of certain software from the Contractor for delivery to the Customer or the Contractor upon the fulfilment of pre-specified conditions and is substantially in the form of Schedule 5 to Part 2 unless otherwise agreed by the Parties.

1.44 **Escrow Materials** means the source code and/or object code of any software Deliverable and all other software programs all as owned by the Contractor, documentation, drawings and plans as well as a list of any third party software programs that would enable a competent programmer skilled in the use of the software Deliverable and any necessary development tools to keep the Deliverables in good order and repair that are stated in Item 23 of the General Order Form.

1.45 **Estimated Contract Price** means the Parties' estimate of the amount payable under the Customer Contract for the relevant:

(a) Non-Recurring Service or Product; or

(b) Short Term Recurring Service,

as stated in Item 39 of the General Order Form.

1.46 **Event** means a circumstance beyond the reasonable control of a Party that results in that Party being unable to perform an obligation on time and includes:

(a) natural events like fire, flood, or earthquake;

(b) national emergency;

(c) terrorist acts (including Cyberterrorism) and acts of vandalism; or

(d) war.

1.47 **Existing Material** means any Licensed Software or any other Material that is developed:

(a) prior to the Commencement Date; or

(b) independently of the Customer Contract,

and that is incorporated into a Deliverable under the Customer Contract.

1.48 **Financial Security** means the security in Item 38 of the General Order Form which is in substantially the form of Schedule 10 to Part 2.

1.49 **Fundamental Breach** means a breach of the Customer Contract by the Customer which prevents the Contractor from carrying out its obligations under the Customer Contract.

1.50 **General Order Form** means Schedule 1 to Part 2 that includes the Order Details that are relevant to that Customer Contract.

1.51 **Government Agency means any of the following:**

(a) a government sector agency (within the meaning of the *Government Sector Employment Act 2013*

(b) a NSW Government agency

(c) any other public authority that is constituted by or under an Act or that exercises public functions (other than a State owned corporation),

(d) any State owned corporation prescribed by the regulations.

1.52 **GST** has the same meaning as in the GST Law.

1.53 **GST Law** means any law imposing or relating to a GST and includes *A New Tax System (Goods & Service Tax) Act* (Cth), *A New Tax System (Pay As You Go) Act* 1999 and any regulation based on those Acts.

1.54 **Hardware** means the physical components of a computer including the microprocessor, hard discs, RAM, motherboard and peripheral devices.

1.55 **Head Agreement** means an agreement between the Contract Authority and the Contractor, comprising those Parts, terms and conditions and other documents listed in clause 4.2 of Part 1.

1.56 **Head Agreement Details** means those details stated in Annexure 1 to Part 1.

1.57 **Head Agreement Documents** means the documentation listed in Annexure 2 to Part 1.

1.58 **Insolvency Event** means where a Party:

(a) stops or suspends or threatens to stop or suspend payment of all or a class of its debts;

(b) is insolvent with the meaning of Section 95A of the *Corporations Act 2001 (Cth);*

(c) must be presumed by a court to be insolvent by reason of an event set out in Section 459C(2) of the *Corporations Act 2001 (Cth);*

(d) fails to comply with a statutory demand within the meaning of Section 459F(1) of the *Corporations Act 2001 (Cth);*

(e) has an administrator appointed or any step preliminary to the appointment of an administrator is taken;

(f) has a mortgagee enter into possession of any property of that Party;

(g) has a controller within the meaning of the Section 9 of the *Corporations Act 2001 (Cth)* or similar officer appointed to all or any of its property; or

(h) has proceedings commenced, a resolution passed or proposed in a notice of meeting, an application to, or order of, a court made or other steps taken against or in respect of it (other than frivolous or vexatious applications, proceedings, notices or steps) for its winding up, deregistration or dissolution or for it to enter an arrangement, compromise or composition with or assignment for the benefit of its creditors, a class of them or any of them.

1.59 **Install** means to set up the Hardware so that the manufacturer's installations tests can be completed successfully.

1.60 **Intellectual Property Rights** means all intellectual property rights including:

(a) copyright, patent, trademark, design, semi-conductor or circuit layout rights, registered design, trademarks or trade name and other protected rights, or related rights, existing worldwide; and

(b) any licence, consent, application or right, to use or grant the use of, or apply for the registration of, any of the rights referred to in (a),

but does not include the right to keep confidential information confidential, Moral Rights, business names, company names or domain names.

1.61 **Information Privacy Principle** or **IPP** means the Information Protection Principles contained in sections 8 to 19 of the *Privacy and Personal Information Protection Act 1998 (NSW).*

1.62 **LD Obligation** means an obligation that is stated in Item 21 of the General Order Form as being an obligation for which the late completion by the Contractor may require the payment of liquidated damages in accordance with clauses 6.28 to 6.35 of the Customer Contract.

1.63 **Licensed Software** means the standard off-the-shelf software provided by the Contractor to the Customer and includes any Updates or New Releases of that software that may be provided to the Customer from time to time in accordance with the Customer Contract.

1.64 **Material** means any Document or other thing in which Intellectual Property Rights subsist.

1.65 **Material Adverse Event** means any matter that:

(a) substantially and adversely affects the Contractor's ability to perform any of its material obligations under the relevant Part, which may result from:

(i) any material litigation or proceeding against the Contractor;

(ii) the existence of any material breach or default of any agreement, or of any order or award that is binding on the Contractor;

(iii) matters relating to the commercial, technical or financial capacity of the Contractor or in the knowledge of the Contractor, any Approved Agent or subcontractor proposed to be engaged in respect of this agreement; or

(iv) any obligation under another contract the compliance with which may place the Contractor in material breach of the relevant Part; or

(b) the Contractor knows, or should reasonably know, will, or has the potential to, cause material reputational damage to the Contract Authority or the Customer as a result of the Contract Authority and/or the Customer's association with the Contractor.

1.66 **Milestone** means the groups of tasks relating to and including the provision of Deliverables to be performed or provided by the Contractor under the Customer Contract.

1.67 **Minor** means, unless otherwise agreed in the Order Documents:

(a) in respect of a Deliverable that is not a Document, a Defect that would not prevent the Deliverable from being used in a production environment even though there may be some insubstantial inconvenience to users of the Deliverable, provided that the Defect does not compromise security; and

(b) in respect of a Deliverable that is a Document, errors that are limited to errors in formatting, style, spelling or grammar or minor errors of fact or interpretation that do not detract from the usefulness or intent of the document.

1.68 **Module** means a document that describes the additional terms and conditions that are specific to a particular Product or Service or method of acquisition of a Product or Service. The Modules are stated in Part 4.

1.69 **Module Order Form** means a document that includes the Order Details that are relevant to the particular Module. The Module Order Forms are stated in Part 5.

1.70 **Moral Rights** means a person's moral rights as defined in the *Copyright Act 1968 (Cth)*.

1.71 **New Material** means any Material that is:

(a) newly created by or on behalf of the Contractor during the performance of its obligations under the Customer Contract;

(b) incorporated into a Deliverable; and

(c) delivered to the Customer in accordance with the requirements of the Customer Contract,

except for any Material that is Existing Material or any adaptation, translation or derivative of that Existing Material.

1.72 **Nominee Purchaser** means a contractor to a Customer that is authorised to enter into the Customer Contract as the Customer's agent.

1.73 **Non-Recurring Services** means Services which are provided by the Contractor under any of the following Modules:

(a) Module 4 – Development Services;

(b) Module 13– Systems Integration Services; and

(c) Module 14 – Hosting Services

and, if agreed by the Parties in Item 39 of the General Order Form:

(d) Module 6 – Contractor Services

(e) Module 7 – Professional Services;

(f) Module 8- Training Services

(g) Module 12- Managed Services;

1.74 **Notice in Writing** means a notice signed by a Party's authorised representative or his/her delegate or agent which must not be an email, or a document scanned and sent by email.

1.75 **Order Details** means the details of the Customer Contract specific to the transaction contemplated by the Customer Contract which are included in the Order Documents and agreed by the Customer and Contractor.

1.76 **Order Documents** means the General Order Form and the documents that are stated on the General Order Form as being incorporated into the Customer Contract, which may include:

(a) any Schedule to Part 2;

(b) any document referred to in, or based on, any Schedule to Part 2; and

(c) one or more Modules and their relevant Module Order Forms.

1.77 **Part** means each pro forma document that is designated as a Part of the Procure IT Framework, being:

(a) Part 1; the Head Agreement, including its Annexures;

(b) Part 2; the Customer Contract, including its Schedules;

(c) Part 3; the Dictionary;

(d) Part 4; the Modules; and

(e) Part 5; the Module Order Forms.

1.78 **Parties** means:

(a) in relation to the Head Agreement: the Contract Authority and the Contractor; and

(b) in relation to the Customer Contract: the Customer and the Contractor.

1.79 **Performance Criteria** means the criteria applicable to the performance of the Contractor including the:

(a) quality of Products or Services offered or delivered;

(b) competitiveness of the Products or Services and pricing;

(c) Contractor's sales and marketing performance;

(d) Contractor's financial stability;

(e) Contractor's management and suitability of its Personnel;

(f) Contractor's administration of the Head Agreement, any Customer Contracts and risk;

(g) Contractor's management of environmental issues;

(h) Contractor's Occupational, Health, Safety and Rehabilitation (OHS&R) Management;

(i) Contractor's industrial relations performance; and

(j) claims on insurance and other financial assurances made in respect of the Contractor's business or the Head Agreement and any Customer Contracts.

1.80 **Performance Guarantee** means a document substantially in the form of Annexure 5 to the Head Agreement or Schedule 9 to Part 2 (as applicable).

1.81 **Personal Information** means information or an opinion (including information or an opinion forming part of a database) whether true or not, and whether recorded in a material form or not, about a natural person whose identity is apparent, or can reasonably be ascertained, from the information or opinion.

1.82 **Personnel** means an entity's directors, officers, employees, agents and subcontractors, and

(a) for the Contractor; includes its Approved Agents and their Personnel; and

(b) for the Customer; includes any Nominee Purchaser and its Personnel, but excludes the Contractor and its Personnel.

1.83 **Prescribed Use** is limited to the use of a Product or Service in a business environment where the direct result of a failure of the Product or Service being supplied results in a serious risk of significant loss of life or personal injury or substantial damage to buildings or other tangible property in the following business environment:

(a) planning, construction, maintenance or operation of an air traffic control system;

(b) planning, construction, maintenance or operation of a mass transit system (e.g. aircraft/trains/ferries/roads);

(c) planning, construction, maintenance or operation of a nuclear facility; or

(d) planning, construction, maintenance or operation of facilities or programs in respect of biological or chemical environments, including quarantine.

1.84 **Price** means an itemised Price (including a rate for a unit), payable in Australian dollars by a Customer for a Product or Service under the Customer Contract in Item 11 of the General Order Form. Price includes GST and any other Tax.

1.85 **Procure IT Framework** means the suite of pro forma documents described in clause 1 of the Customer Contract and clause 1 of the Head Agreement that provide the framework for the procurement Products and Services as represented by each of the Parts.

1.86 **Product** means Hardware and Licensed Software only.

1.87 **Project Implementation and Payment Plan** or **PIPP** means a document that includes Order Details relating to the implementation of a project and associated payment arrangements which is included in a Customer Contract if stated in Item 20 of the General Order Form. An example template of a PIPP is set out in Schedule 12 to the Customer Contract.

1.88 **Protected Clauses** means the following clauses of the Customer Contract:

(a) Additional Conditions (clause 3.2 (b));

(b) Formation (part of clause) and Compliance with Consumer Laws (clauses 3.6 to 3.10);

(c) Product Safety (clauses 5.9 to 5.10);

(d) Intellectual Property Rights (clause 13);

(e) Privacy (clause 15);

(f) Insurance (clause 16)

(g) Liability (clause 18);

(h) Indemnities (clause 19);

(i) Conflict of Interest (clause 20);

(j) Notice of Change in Control (clause 23.3);

(k) Dispute Resolution (clause 24 and Schedule 11 – Dispute Resolution Procedures);

(l) Termination (clause 25);

(m) Assignment and Novation (clauses 26.3 to 26.6); and

(n) Applicable Law (clause 26.17).

1.89 **Recurring Services** means Services which are provided by the Contractor under any of the following Modules:

(a) Module 2 – Hardware Maintenance and Support Services;

(b) Module 5 – Software Support Services;

(c) Module 11– Telecommunications Services

(d) Module 12– Managed Services;

and, unless agreed otherwise by the Parties in Item 39 of the General Order Form:

(e) Module 6 – Contractor Services

(f) Module 7 – Professional Services;

(g) Module 8- Training Services

(h) Module 10 X as a Service

(i) Module 14 Hosting Services

1.90 **Related Company** means an entity owned by, controlling, controlled by, or under common control with, directly or indirectly, a Party. For this purpose, one entity "controls" another entity if it has the power to direct the management and policies of the other entity (for example, through the ownership of voting securities or other equity interest, representation on its board of directors or other governing body, or by

contract). A Related Company includes a "related body corporate" as that expression is defined in the Corporations Act 2001 (Cth).

1.91 **Reseller** means any entity who provides Products or Services but:

(a) is not the original equipment manufacturer or owner of the Intellectual Property Rights in the Product or Service; or

(b) is not a Related Company of the original equipment manufacturer or owner of the Intellectual Property Rights in the Product or Service.

1.92 **Schedule** means a schedule to Part 2.

1.93 **Service** means any item or thing to be provided under a Customer Contract that is not a Product, including the services provided under the Modules that provide for Hardware Maintenance and Support Services, Development Services, Software Support Services, IT Personnel, Professional Services, Training Services, Data Migration, X as a Service, Telecommunications Services, , Managed Services, Systems Integration Services.

1.94 **Service Address** means:

(a) in the case of the Contract Authority; the address set out in the Head Agreement;

(b) in the case of the Contractor;

(i) the address set out in the Head Agreement or such other address of which the Contactor gives Notice in Writing to the Contract Authority; or

(ii) in relation to a Customer Contract at its address set out in Item 5 of the General Order Form or such other address of which the Contactor gives Notice in Writing to the Customer; or

(c) in the case of the Customer; the address set out in Item 2 of the General Order Form or the address of which the Customer gives Notice in Writing.

1.95 **Service Level Agreement** or **SLA** means the document or clauses that set out the performance expectations of the Parties and defines the benchmarks for measuring the performance of the Services. An example template of an SLA is set out in Schedule 3 to Part 2.

1.96 **Service Levels** means the minimum performance levels to be achieved by the Deliverable, as specified in a Service Level Agreement.

1.97 **Short Tem Recurring Services** means Recurring Services that are stated to be provided for a period of 12 months or less in the Order Documents at the Commencement Date.

1.98 **Site** means the Customer's offices or other Customer-controlled locations stated in Item 18 of the General Order Form to which a Deliverable is to be delivered and/or at which a Deliverable is to be installed.

1.99 **Site Specification** means the document which details the environmental, operational, safety and management requirements in relation to the Site that are necessary for the provision of the Deliverable(s).

1.100 **Specified Personnel** means the key personnel of the Contractor who are required to undertake the provision of the Deliverables or part of the work constituting the Deliverables, as stated in Item 27 of the General Order Form.

1.101 **Stage** means one or more Milestones that are identified as a stage in the Project, Implementation and Payment Plan.

1.102 **State** means the State of New South Wales.

1.103 **Statement of Requirements** means the Customer's statement of any requirements that the Contractor must fulfil in respect of the Deliverables which may include all relevant instructions, information, data, documents, specifications, plans, drawings and other materials and particulars.

1.104 **Statutory Requirements** means the Australian laws, regulation or by-laws relating to the performance of the Party's obligations under the relevant Part.

1.105 **Subcontractor** means a third party to which the Contractor has subcontracted the performance or supply of any Services.

1.106 **Substantial Breach** means:

(a) a breach of the Customer Contract by the Contractor which deprives the Customer of substantially all of the benefit of the Customer Contract; or

(b) the following breaches by the Contractor of the Customer Contract:

(i) a delay by the Contractor in performing its obligations under the Customer Contract which continues beyond the extension of time granted under clauses 6.26 and 6.27;

(ii) failing to provide suitable replacement personnel as required under clause 8.9 where such failure prevents the Contractor from performing fundamental obligations under the Customer Contract;

(iii) breaching any warranty under clause 9.1;

(iv) where Acceptance Tests are required in order for the Deliverable to achieve AAD (and the obligation to ensure the Deliverable achieves AAD by a certain date is not an LD Obligation), failing to pass Acceptance Tests which results in rejection of the Deliverable by the Customer under clause 10.12(e);

(v) where Acceptance Tests are not required in order for a Deliverable to achieve AAD (and the obligation to ensure the Deliverable achieves AAD by a certain date is not an LD Obligation), failing to deliver the Deliverable by the date required in the Customer Contract;

(vi) failing to effect and maintain insurance policies as required under clauses 16.1, 16.2, 16.3 or 16.7 (other than to the extent that the Contractor received an exemption under clause 16.8);

(vii) failing to provide a Performance Guarantee as required under clause 17.2;

(viii) failing to provide a Financial Security as required under clause 17.4; or

(ix) the existence of a Conflict of Interest which in the Customer's reasonable opinion prevents the full and proper performance of the Contract by the Contractor and the Contractor has not complied with clause 20.1(b) within a reasonable period.

1.107 **Tax** means any sales tax, value added tax, duty, withholding tax, levy, impost or other charge or duty levied by any government in Australia or elsewhere, which arises out of

or in connection with the Contractor's performance of its obligations under the relevant Part, but excludes GST and any Tax based on the net income of the Contractor.

1.108 **Tax Invoice** has the same meaning as provided for in the GST Law.

1.109 **Taxable Supply** has the same meaning as provided for in the GST Law.

1.110 **Term** means the term of the Head Agreement, set out in Item 6 of the Head Agreement Details and any extension of the Term in accordance with clause 2.1 of the Head Agreement.

1.111 **User Documentation** means the Contractor's standard off the shelf documents that describe the features and functions of a Product or Service, in a hard copy, electronic or online format that are provided by the Contractor to the Customer. User Documentation excludes any Document that is designed by the Contractor to be training materials.

1.112 **Virus** means a computer program, code, device, product or component that is designed to or may in the ordinary course of its operation, prevent, inhibit or impair the performance of a Deliverable in accordance with the Deliverable's Contract Specifications, but does not include any code, mechanism or device that is included in the software by the licensor for the purpose of managing the licensed use of the software.

1.113 **Warranty Period** means:

(a) in relation to Hardware, 365 days from AAD;

(b) in relation to Licensed Software, 90 days from AAD; and

(c) in relation to Services where there is an Acceptance Test process, 30 days from AAD.

1.114 **Workaround** means a fix or alternative procedure to temporarily address a Defect.

INTERPRETATION

1.115 The following rules also apply in interpreting any Part, except where the context makes it clear that a rule is not intended to apply.

(a) A reference to:

(i) legislation (including subordinate legislation) is a reference to that legislation as amended, re-enacted or replaced, and includes any subordinate legislation issued under it;

(ii) monetary references are references to Australian currency;

(iii) a document or agreement, or a provision of a document or agreement, is a reference to that document, agreement or provision as varied, assigned or novated;

(iv) a reference to a "Part [number]" is a reference to that specific Part only; e.g. "Part 3" is a reference to Part 3 only. A reference to "Part" without a number is a reference to the Part in which the reference to that Part appears e.g. if the phrase "clause 3 in this Part" appears in a clause in Part 2, then this is a reference to clause 3 in Part 2 only;

(v) a person includes any type of entity or body of persons whether or not it is incorporated or has a separate legal entity; and

(vi) anything (including a right, obligation or concept) includes each part of it.

(b) If an agreement expressly or impliedly binds more than one person then it must bind each such person separately and all such persons jointly.

(c) A singular word includes the plural, and vice versa.

(d) The words “include(s)” and “including” are not words of limitation.

(e) When a Party exercises its “discretion”, the party may exercise its discretion in any way it chooses, provided only that it acts in good faith. There is no obligation to act reasonably where the word “discretion” is used.

(f) Where there is an obligation that requires the completion of particular Order Document, including a PIPP or Service Level Agreement, but the particular Order Document is not incorporated into the Customer Contract because it is not stated in the General Order Form that the particular Order Document is included in the Customer Contract, then that obligation does not form part of the relevant Customer Contract.

(g) The Parties may undertake business by the electronic exchange of information and the provisions of each Part will be interpreted to give effect to undertaking business in this manner. To the extent permitted by law, any Part or any Order Document, including the General Order Form may be in electronic format.

(h) Where there is a shortened version of the General Order Form, Module Order Form or other Order Document, and the Order Details (details placed under an Item number) have been numbered differently in the shortened version of the Order Document to the Item numbering in the pro forma template of the relevant Order Document, then the references to the Item number in the relevant Part of the *Procure IT Framework* shall be interpreted as a reference to the relevant Item in the shortened version of the relevant Order Document notwithstanding the actual Item number used in the shortened version of relevant Order Document, e.g. if in a shortened General Order Form the Order Details relating to Credit/Debit Cards are included under Item number 16 in the shortened General Order From, then the reference to “Item 33” in clause 11.3 of the Customer Contract shall be interpreted as a reference to Item number 16 in the shortened General Order Form.

1.116 Headings are for the purpose of convenient reference only, and do not affect interpretation of the document in which they appear.

Module 3 – Licensed Software

Version 3.1

TABLE OF CONTENTS

[Use Guidelines

This Module should be used when the Customer is buying and/or installing both proprietary and open source software which is to be used either without modification or some minor modification to suit the Customer's business requirements. There are a variety of different types of software licences. Some are based on the number of machines on which the licensed programme can be run or based on the number of users that can use the programme.

Licences may be able to be sublicensed to outsourcers. If software is to be adapted or customized for the Customer's use Module 4 should be used.

See the Procure IT User Guide for more details.

This text is not to be used in interpreting the Module.]

Agreed Terms and Interpretation

AGREED TERMS

The terms and conditions included in this **Module 3** form part of the Customer Contract and apply when the Parties state that the Licensed Software Module forms part of the Customer Contract in Item 8 of the General Order Form.

In this Module, unless the contrary intention appears:

1.1 **Approved Purpose** means to use the Licensed Software for a purpose described in the Module Order Form and in absence of a purpose being stated on the Module Order Form, for the internal processing of the Customer's own data.

1.2 **Class** means specific rights that are granted by the Contractor to the Customer to use the Licensed Software that are stated in the Module Order Form, and may include the License Period, number and type of Permitted Users, number, type or capacity of any hardware on which the Licensed Software may be used, or other attribute which defines the Customer's right to use the Licensed Software.

1.3 **Designated Equipment** means the hardware platform/operating system combination stated in the Module Order Form upon which the Licensed Software is installed.

1.4 **Exception** means the reasons that excuse the Contactor from being in breach of the Customer Contract in respect of the Licensed Software and Services provided under this Module, as stated in clause 9.

1.5 **First Release** means a license that is for a release (as denoted by the integer to the left of the decimal point in the release number e.g. release version **3**.0) of the Licensed Software, which although is generally available for supply to all of the Contractor's customers in the Australian market, that release has not been licensed (or the New Release has not been made available) to any other customer in the Australian market at the time the license is granted to the Customer for that release of the Licensed Software or New Release.

1.6 **License** means the license granted by the Contractor to the Customer in respect of the Licensed Software under this Module 3 to the Customer Contract.

1.7 **License Period** means the period that the License is granted and is:

(a) stated in the Class of License; or

(b) in absence of a Class of License, perpetual.

1.8 **New Release** means software which has been produced primarily to extend, alter or improve the Licensed Software by providing additional functionality or performance enhancement (whether or not Defects in that Licensed Software are also corrected) while still retaining the original designation of the Licensed Software. New Release does not include any software that is generally licensed by the Contractor to its customers as a different product.

1.9 **Open Source License** means a license that governs the use of open source code, which is included with the open source code, examples of which include the GNU General Public License v2.

1.10 **Permitted User** means each person the Customer has permitted to use the Licensed Software for the Approved Purpose, in accordance with the Customer Contract.

1.11 **Reseller as Facilitator** means a Reseller who uses the business model described in clause 7.1(a) to facilitate the supply of the Licensed Software to the Customer.

1.12 **Reseller with Pass Through Warranties** means a Reseller who uses the business model describe in clause 7.1(b) to supply Licensed Software to the Customer.

1.13 **Software Support Services** means the Services the Contractor agrees to provide for the Licensed Software under Module 5 when the Parties agree that Module 5 forms part of the Customer Contract.

1.14 **Third Party Component** means software components, plug-ins and other programs that are owned by third parties and are stated on the Module Order Form as being Third Party Components. The term **Third Party Component** does not include open source software.

1.15 **Update** means software which has been produced primarily to overcome Defects in, or to improve the operation of, the relevant part of the Licensed Software without significantly altering the Contract Specifications whether or not that Licensed Software has also been extended, altered or improved by providing additional functionality or performance enhancement.

INTERPRETATION

1.16 Other capitalised words and expressions used in this Module are defined and interpreted in Part 3 of the Procure IT Framework.

2. Licence Terms

CLASS OF LICENSE

2.1 The Contractor grants to the Customer a non-exclusive License to use the Licensed Software on the Designated Equipment on the terms of the Class of License stated in the Module Order Form.

2.2 If there is no Class of License stated in the Module Order Form, the Contractor grants the Customer a non-exclusive License to:

(a) install the Licensed Software on the Designated Equipment in accordance with the User Documentation;

(b) if the General Order Form states that the Licensed Software is to undergo Acceptance Tests; to carry out Acceptance Tests in respect of the Licensed Software;

(c) run (but not modify or adapt) the Licensed Software from the AAD on the Designated Equipment and use the Licensed Software solely for the Approved Purpose for the License Period;

(d) use, adapt and/or reproduce the Licensed Software to the extent permitted under the *Copyright Act* 1968 (Cth) ("**the Act**"), including rights granted under sections 47B(3) and sections 47C, 47D, 47E or 47F of the Act;

(e) allow the use of the Licensed Software and User Documentation by the Customer's contractors solely for the Approved Purpose for the License Period, provided that:

(i) the use of the Licensed Software and User Documentation is restricted to the same Class of usage granted to the Customer. For clarity, any usage by such persons must be included within the Class of License (by way of example, if the Class of License is based on the number of users then the number of contractor's users is included in the number of users acquired by the Customer); and

(ii) unless otherwise required by the Contractor, the Customer's contractor first signs an agreement or undertaking in a form reasonably acceptable to the Contractor that protects the use and disclosure of the Licensed Software in the same manner as stated in the Customer Contract;

(f) make such number of copies of the Licensed Software as are reasonably required for operational use, backup, archive and security.

SUBSTITUTION, CHANGE AND TRANSFER

2.3 If the License restricts the use of the Licensed Software to specific Designated Equipment, the Customer may:

(a) transfer the Licensed Software to alternative equipment of substantially the same purpose, capacity and performance standards; and

(b) install and run the Licensed Software on any back-up hardware while the Designated Equipment is for any reason temporarily inoperable,

with the Contractor's prior written consent, such consent not to be unreasonably withheld. Any transfer, change or substitution may be documented using a Change Request.

2.4 If the Customer requires the Contractor to assist with the transfer of the Licensed Software to other equipment, then a Change Request must be agreed by the Parties.

LICENSE PERIOD

2.5 Unless earlier terminated in accordance with the Customer Contract or otherwise surrendered by the Customer, the License remains in force for the duration of the License Period.

2.6 Where the License Period is not perpetual then:

(a) at least 30 days or as otherwise agreed in the Module Order Form prior to the end of each License Period, the Contractor may at the Contractor's sole discretion either provide the Customer with written notice of the Price and the payment arrangements that will apply for the License for the Licensed Software for an extended period of License Period or provide a new Customer Contract, including a new General Order Form and Module Order Form with the Price and payment arrangements that will apply for a new License;

(b) where the Customer has been given an option to extend the License in accordance with clause 2.6(a), the Customer may elect not to extend the License or elect not to enter into a new License by providing the Contractor with written notice, such notice to be received at least 15 days prior to the date when the current License Period expires;

(c) if the Contractor does not receive written notice under clause 2.6(a), then the License Period must be extended for the extended License Period and the Customer must pay the Price using the terms and conditions and the payment arrangements, all as stated in the notice given under clause 2.6(a); and

(d) the procedures in clause 2.6 will apply at the end of each License Period.

THIRD PARTY COMPONENTS

2.7 If Third Party Components are associated with the Licensed Software then:

(a) the Contractor is acting as a Reseller for the Third Party Components and the provisions of clause 7 apply; or

(b) if stated on the Module Order Form, the Third Party Components are licensed as part of the Licensed Software, in which case they will be deemed to be part of the Licensed Software and the provisions of the Customer Contract, including the warranties and indemnities in this Module 3 and in Part 2 will apply to the Third Party Components to the same extent as they apply to Licensed Software.

INTELLECTUAL PROPERTY RIGHTS

2.8 The Customer acknowledges that ownership in the Licensed Software does not pass to the Customer and the Customer must use the Licensed Software only in accordance with the Customer Contract.

2.9 Unless stated otherwise in the Class of License, the Customer must not itself, nor permit any other person to:

(a) copy, adapt, translate, publish, communicate to the public, or create any adaptation, translation or derivative of the Licensed Software or the User Documentation, unless expressly permitted by law;

(b) disclose or sub-license, lease, rent, loan, assign or otherwise transfer the Licensed Software or User Documentation to any third person (other than as permitted under clauses 2.2(e), 2.14 and 2.17);

(c) reverse engineer, reverse compile, de-compile or disassemble the object code of any part of the Licensed Software, or otherwise attempt to derive the source code of the Licensed Software, except to the extent permitted by law; or

(d) do anything that would prejudice the Contractor's right, title or interest in the Licensed Software. For clarity, use in accordance with this Customer Contract is not prejudicial to the Contractor’s rights, title or interest in the Licensed Software.

2.10 All Intellectual Property Rights, including adaptations, translations and derivative works in the Licensed Software or other material provided under this Customer Contract are the exclusive property of the Contractor (or the Contractor’s licensor, if applicable), and must vest in or must be transferred to the Contractor immediately upon creation, as the case may be.

2.11 At the request of the Contractor, the Customer must assign or transfer the Intellectual Property Rights (and must procure the granting of consent for the unfettered use of Moral Rights) to any adaptations, translations or derivative works of the Licensed Software or other materials provided under this Customer Contract to the Contractor or its designee and must sign (or procure any person to sign) any document reasonably required to assign or transfer any such Intellectual Property Rights to the Contractor or its designee, and/or consent to the unfettered use of any Moral Rights, (at the Contractor’s cost).

2.12 The Customer must not remove, alter, obscure or deface any:

(a) trade mark, service mark, get up, logo or branding, proprietary or restricted use legend; or

(b) any disclaimer, warning, instruction or advisory notice,

on the Licensed Software, User Documentation, on any other materials provided under the Customer Contract or on any packaging.

PERMITTED USERS

2.13 The Customer is liable for the acts and omissions of all Permitted Users to the same extent as if they were the acts or omissions of the Customer.

MACHINERY OF GOVERNMENT CHANGES

2.14 The License granted to the Customer under this Module is non-transferable, subject only to the Customer having a right to transfer the License to another Eligible Customer as part of a machinery of government change implemented by law and in accordance with clause 2.17.

2.15 If a License is transferred in accordance with clause 2.14, the Contractor:

(a) must immediately notify the Customer of any proposed reductions in costs which may occur; and

(b) may notify the Customer of any proposed additional fees for any additional:

(i) overall usage arising from the Machinery of Government Change, to the extent that such usage is greater than any limits on usage specified in the Customer Contract; and

(ii) costs directly incurred as a result of the provision of additional overall Services.

2.16 The Contractor agrees to negotiate with the Customer in good faith to vary or consolidate the Customer Contract to:

(a) adjust the Price as a result of the notification of the matters raised in clause 2.15; and/or

(b) comply with any specific requirements of the Departments, Agencies and Eligible non-Government Bodies to which the Customer Contract is transferred following the Machinery of Government Change.

Any agreement that arises from this clause must be documented via a Change Request.

TRANSFER TO OUTSOURCER

2.17 The Customer may sublicense any of the rights granted under the License without additional charge, (on one or more occasions) on a limited time basis to a contractor that is providing outsource services to the Customer that includes the operation of the Licensed Software, provided that:

(a) the Licensed Software is used solely for use of the Customer as is permitted under this Customer Contract, is limited to the period of the outsource arrangement and the sublicense automatically terminates at the end of the period of the outsource arrangement;

(b) the contractor's use of the Licensed Software is included within the Class of License (e.g. if the Class of License is based on the number of users, then the number of the contractor's users is included within the number of users acquired by the Customer); and

(c) unless otherwise required by the Contractor, the contractor first signs an agreement or undertaking in a form reasonably acceptable to the Contractor that protects the use and disclosure of the Licensed Software in the same manner as stated in the Customer Contract.

TERMINATION

2.18 The Customer may terminate the License for convenience at any time during the License Period by providing the Contractor with 30 days Notice in Writing. If the License is terminated under this clause the Customer must immediately pay any installments of the Price that have not been paid, and the Customer is not entitled to a refund of any Price that has been paid.

2.19 Where the Customer wishes to terminate the License and:

(a) convert to a different Class of License that is offered by the Contractor in respect of the Licensed Software on the Designated Equipment; and

(b) the Price agreed for the new License is equal to or greater than the Price that applies to the terminated License,

the Parties must follow the procedure set out in clause 26 of Part 2 of the Customer Contract to vary the Customer Contract and the Contractor must allow the Customer to set-off against the Price of the new License the Price that has been received by the Contractor for the current License.

OBLIGATIONS UPON TERMINATION OR EXPIRY

2.20 The Customer, after termination or expiry of the License:

(a) subject to sub-clause (b), must destroy (and provide such evidence of such destruction as the Contractor may reasonably require) or return to the Contractor all copies of the Licensed Software that are in its possession or control;

(b) may retain a copy of the Licensed Software and its related User Documentation where it is reasonably required by the Customer to comply with any Statutory Requirement relating to record keeping and retention. Such copies may only be used by the Customer to comply with those Statutory Requirements and the Customer must not use, and must not permit to be used, such Licensed Software and related User Documentation for any other purpose. Such copy may not be used to process any data that is not in the Licensed Software on the last day of the License Period.

EXPORT

2.21 Export laws and regulations of Australia and the United States may apply to the Licensed Software and User Documentation under this Module. The Customer agrees:

(a) that such export laws govern the use of the Licensed Software and User Documentation (including technical data related to them) and any other Deliverables provided under this Customer Contract;

(b) to comply with all such export laws and regulations (including "deemed export" and "deemed re-export" regulations); and

(c) that no data, information, Licensed Software and User Documentation, Deliverable and/or materials resulting from this Customer Contract (or any direct product of any of them) will be:

(i) exported, directly or indirectly, in breach of these export laws; or

(ii) used for any purpose prohibited by these export laws, including nuclear, chemical, or biological weapons proliferation, or development of missile technology.

3. Supply of Licensed Software

INSTALLATION

3.1 Where the Module Order Form specifies that the Contractor is to install (or grant access to) the Licensed Software, the Contractor must install (or grant access to) the Licensed Software by the date stated in the Module Order Form.

3.2 Unless the Module Order Form specifies that the Contractor is responsible for installing the Licensed Software, the Customer is responsible for downloading (if applicable) and/or installing the Licensed Software on the Designated Equipment. The Customer must perform the installation in accordance with any instructions in the User Documentation or other instructions provided by the Contractor, and provided it does so the act of installing the Licensed Software will not invalidate any warranty provided by the Contractor under the Customer Contract or any applicable statutory guarantee.

3.3 Where the Contractor makes the Licensed Software and User Documentation available for download from a website, the Contractor must provide the Customer with the relevant access codes promptly following the date the Parties enter into the Customer Contract, or such other time stated in the Module Order Form.

3.4 If the Customer requests installation to be postponed or to be made in advance of the date nominated in the Module Order Form, the Contractor must use its reasonable efforts to re-schedule installation accordingly. The Customer is responsible for any costs incurred by Contractor in re-scheduling the installation, such costs to be calculated using the rates set out in the Customer Contract, or if none, are stated at the Contractor's then current commercial rates.

3.5 If the Contractor provides (or provides access to) any:

(a) software or documentation for which the Contractor is acting as a Reseller as Facilitator under clause 7.1(a); or

(b) software that is subject to an open source license,

the Contractor provides this software as a convenience only and without liability.

USER DOCUMENTATION

3.6 At the time of delivery of (or the grant of access to) the Licensed Software, the Contractor must provide the Customer with the User Documentation in the quantities that are stated in the General Order Form.

3.7 The Contractor must from time to time and in any event as soon as practicable give the Customer access to copies of any amended, revised or supplementary User Documentation during the License Period. This information must be provided:

(a) without additional charge, if the Contractor provides such information to its other customers generally without charge; or

(b) in all other cases, at the Contractor's then current fees.

BACK UP

3.8 Unless the Contractor has an obligation under another Module to take back ups of data that is loaded into in a Deliverable, the Customer must take and maintain adequate backups of any data that is loaded into any Deliverable so that there is no loss of data in the event that any failure of any Deliverable causes damage to, or loss of, any data.

FIRST RELEASE

3.9 If the Licensed Software is a First Release:

(a) this must be stated and agreed on the Module Order Form; and

(b) the Parties may agree additional terms and conditions or services that are required for that First Release, such agreement to be documented in the Order Documents.

4. Updates and New Releases

4.1 To the extent that it is stated on the Module Order Form that the Contractor provides the Customer the right to receive Updates and/or New Releases for Licensed Software as part of the License, and not as part of a separate agreement for Software Support Services or other arrangement, then the provisions of clauses 4.2 to 4.4 apply to the Customer Contract.

4.2 The Contractor must, at no additional charge to the Customer, make available to the Customer any Updates and New Releases for the Licensed Software if and when the Contractor makes these generally available to its other customers during the License Period at no additional charge.

4.3 The Customer must notify the Contractor within 90 days from the date that the Update or New release is made available to Customer if the Customer decides not to use the Update or New Release. The Customer must accept and use any Update that the Contractor advises addresses a security issue.

4.4 If the Customer accepts the Update or New Release:

(a) if requested by the Customer, the Contractor must install the Update or New Release, coordinating and scheduling such installation with the Customer. The Customer must pay the Contractor the costs for such installation at the Contractor's then current time and materials rates, unless agreed otherwise. This arrangement may be documented by way of a Change Request;

(b) if the Customer installs the Update or New Release, the Customer must do so in accordance with any instructions provided by the Contractor, and the Customer is responsible for all testing, including testing for interoperability with other software programs;

(c) the License Price must not be increased, unless agreed otherwise on a Module Order Form;

(d) the Contract Specifications of the Licensed Software will be deemed to be amended to the extent that the specifications for the Update or New Release supersede the existing Contract Specifications; and

(e) following installation of the Update or New Release, the Customer must destroy or return to the Contractor all copies of the original Licensed Software or otherwise deal with all such copies in accordance with the Contractor's directions, provided that the Customer may retain a copy of the superseded Licensed Software and its related User Documentation where:

(i) it is necessary to create an effective back up of the Licensed Software; or

(ii) it is reasonably required by the Customer to comply with any Statutory Requirement relating to record keeping and retention. Such copies may only be used by the Customer to comply with those Statutory Requirements.

The Customer must not use, and must not permit to be used, such superseded Licensed Software and related User Documentation to be used for any other purpose. Such copy may not be used to process any data.

4.5 Subject to clause 4.3, if the Customer decides not to use the Update or New Release then the Customer acknowledges and agrees that:

(a) subsequent Updates or New Releases may not operate with the Licensed Software; and

(b) the Licensed Software may have its usefulness reduced over time;

(c) the Contractor may not be able to remedy any Defects in the Licensed Software; and

(d) the Contractor is not responsible for any Defect in the Licensed Software, nor any incident, outage or breach of any Service Level, which would not have occurred had the latest version of the Licensed Software been used.

For clarity, nothing in this clause reduces the Contractor's obligations under clauses 8 and 9.

4.6 The Contractor must not provide a New Release that is a First Release without notifying the Customer that a New Release is a First Release. If a New Release is a First Release, the Parties may agree additional terms and conditions or services that are required for that First Release, such agreement to be documented on a Change Request.

5. Open Source Software

5.1 Nothing in this Customer Contract overrides the terms of any Open Source License. Any open source code is available only under the terms of the relevant Open Source License.

5.2 To the extent that open source code is associated with any Licensed Software:

(a) the open source code is supplied and licensed under the Open Source License and not under Module 3;

(b) if stated on the Module Order Form and subject to clause 5.2(c), any open source code that is incorporated into the Licensed Software is deemed to be part of the Licensed Software solely for the purpose of the warranty under clauses 8 and 9 under this Module, and/or any statutory guarantee under the CCA;

(c) it is agreed by the Parties that the Contractor excludes any warranty or indemnity whatsoever in respect of the Intellectual Property Rights in any open source code to the maximum extent permitted by law;

(d) the Customer must remove any of the Contractor's trademarks, service marks, logos, get up or other branding from any open source code if:

(i) the Customer creates any new software that is a work based on the open source code; or

(ii) the Customer seeks to distribute any open source code that has been provided to it with Contractor's trademarks, service marks, logos, get up or other branding; and

(e) the Customer warrants to the Contractor that it will comply with the terms of the Open Source License.

6. Ancillary Services

TRAINING

6.1 Where stated on the Module Order Form, the Contractor must provide the training for the Prices stated in the Module Order Form.

OTHER SERVICES

6.2 Where stated on the Module Order Form, the Contractor must:

(a) provide the necessary services to install the Licensed Software;

(b) provide any ad hoc issue resolution or support service for the Licensed Software as part of the License and not as part as Software Support Services,

at the times and for the Prices set out in the Module Order Form.

6.3 The Parties may agree that other services are to be provided by the Contractor during the Contract Period. The details of those Services, including the scope of the Services and the Prices that are payable for them, must be set out in the Order Documents or if the Services are requested after the Commencement Date, on a Change Request and the Variation Procedures in Schedule 4 – Variations Procedures will apply.

7. Reseller Provision of Licensed Software

7.1 Where it is specified on the Order Documents that the Licensed Software is to be supplied via a Contractor that is a Reseller, the provisions of this clause 9 apply, and the Customer and the Contractor must agree on the Module Order Form which of the business models, Reseller as Facilitator or Reseller with Pass Through Warranties, applies to the supply of the Licensed Software:

(a) **Reseller as Facilitator.** In this business model the Contractor provides reseller services which facilitate the supply of the Licensed Software by the original IP owner or its authorised distributor to the Customer, in which case:

(i) the Contractor will procure that the original IP owner or its authorised distributor enters into a contract directly with the Customer for the supply of the Licensed Software (and/or any Updates and New Releases), and the provisions of the Customer Contract that relate to the supply of the Licensed Software, including provisions in this Customer Contract relating to intellectual property rights and the features, capabilities, performance or other characteristics of the Licensed Software and the other provisions of this Module (other than clause 6) do not apply. The terms of the contract between the original IP owner or its authorised distributor and the Customer for the supply of the Licensed Software will be:

(A) attached to the Customer Contract;

(B) available for the Customer to accept online from a website nominated by the Contractor (including the website of the original IP owner or authorised distributor); or

(C) in the form of a shrinkwrap license or license document that is provided with the Licensed Software (a copy of which is available in advance of delivery, upon request from the Customer)

and such contract will be deemed to have been reviewed by the Customer and entered into by the Customer and the original IP owner or authorised distributor (as stated in the contract) on the date when the Customer enters into the Customer Contract;

(ii) the Contractor will co-ordinate and manage the provision of the original IP owner's or distributor's (as applicable) warranty service, if any, that is to be provided in respect of any Defect or alleged Defect that is reported by the Customer to the Contractor;

(iii) the Customer must pay the Contract Price for the Licensed Software to the Contractor, and the Contractor must pay the amount agreed between the Contractor and the original IP owner or its authorised distributor for the Licensed Software; or

(b) **Reseller with Pass Through Warranties.** In this business model, the Contractor will supply the Licensed Software to the Customer on the terms and conditions of the Customer Contract, except that:

(i) clause 19.1(c) of Part 2 does not apply;

(ii) clauses 5, 8 and 9 of this Module do not apply;

(iii) the warranties or guarantees that are provided under this Module are limited to any warranties and guarantees that cannot be excluded by law and any warranties that are provided by the original IP owner or its authorised distributor permits the Contractor to assign to the Contractor's customers; and

(iv) the Contractor must use best efforts to ensure that:

(A) all benefits of the warranty to the Customer for that Licensed Software are utilised to the benefit of the Customer; and

(B) all benefits of any original IP owner or its authorised distributor warranty services for that Licensed Software are utilised to the benefit of the Customer.

7.2 The Customer warrants to the Contractor that the Customer and all of the Customer's Permitted Users will comply with the terms of any contract between the Customer and the original IP owner or its authorised distributor (as applicable).

7.3 The Contractor must provide any value added services that are set out in the Order Documents.

8. Specific Warranties

SCOPE

8.1 The Contractor warrants that the Licensed Software will meet the requirements of the Contract Specifications in all material respects when operating on the Designated Equipment during the Warranty Period, subject to the Exceptions.

8.2 Owing to the nature of the subject matter, the Contractor expressly excludes any warranty that:

(a) the Licensed Software will be error free;

(b) the Licensed Software will operate without interruption;

(c) it will correct all program errors;

(d) the Licensed Software will be compatible with any hardware, software or data not supplied by the Contractor (except for the Designated System);

(e) any Licensed Software or User Documentation will meet the Customer's requirements.

8.3 If an unmodified version of the Licensed Software fails to perform in accordance with the requirements of the Customer Contract and the Customer provides the Contractor with written notice of the Defect within the Warranty Period, then the Contractor must, at its option, promptly remedy those Defects, implement a Workaround or replace the Licensed Software, at its own expense, or provide a refund of the Price paid for the License. Any remedy that is implemented is warranted only during the remainder of the Warranty Period.

8.4 The Customer must provide reasonable assistance to the Contractor in order to assist the Contractor to identify and resolve the Defect, including installing patches and Workarounds.

9. Exceptions

9.1 The Contractor is not liable for any breach of the Customer Contract which arises as the result of:

(a) modifications to the Licensed Software that were effected or attempted by a person other than the Contractor or its authorised representative;

(b) any act, error, fault, neglect, misuse or omission of the Customer;

(c) damage caused by the operation of the Licensed Software other than in accordance with recommended operating procedures, User Documentation or otherwise than in accordance with the directions or recommendations of the original IP owner, authorised distributor or the Contractor;

(d) any Virus, denial of service attack or other malicious act that adversely affects the Licensed Software, except to the extent that;

(i) the attack or malicious act is an attack or malicious act of the Contractor; or

(ii) the Contract Specifications include a requirement to protect against Viruses, denial of service attacks or other malicious acts, and the Customer's damages are caused solely by a failure to meet that obligation in the Contract Specification;

(e) improper use or mismanagement by the Customer; or

(f) an Event.

9.2 Where the Contractor has been requested to provide any remedy and the item that was requested to be remedied is determined not to be a Defect then the Contractor is entitled to charge the Customer for the costs and expenses (calculated using the rates set out in the Customer Contract, or if none are stated, at the Contractor's then current commercial rates) that arise out, of or in connection with identifying and attempting to remedy that item.

10. Audit

RECORDS

10.1 The Customer must:

(a) if and to the extent stated on the Module Order Form maintain records of:

(i) the location of all copies of the Licensed Software;

(ii) the usage of the Licensed Software as measured against the Class of License;

(b) provide copies of the records kept under this clause to the Contractor every six months, or such other frequency stated on the Module Order Form; and

(c) ensure that, prior to the disposal of any media or other storage device, any Licensed Software contained on it has been erased or destroyed.

AUDIT AND VERIFICATION

10.2 The Customer must, upon reasonable written notice from the Contractor, allow the Contractor to make investigations in any reasonable manner to verify the Customer's compliance with the License.

10.3 The costs of the review in clause 10.2 must be borne by the Contractor unless the review shows that the Customer has not used the Licensed Software in accordance with the Customer Contract and as a result has underpaid the Contractor. If this occurs then the costs of the review must be paid in accordance with the sliding scale below:

Proportion of reviewer's fees to be borne	Difference between License Fee paid and payable
$0	95% of payable License Fee was paid
50% of audit and other costs	75-95% of payable License Fee paid
75% of audit and other costs	50-75% of payable License Fee paid
100% of audit and other costs	less than 50% of payable License Fee paid

10.4 If the review shows that the Customer has not used the Licensed Software in accordance with the Customer Contract and as a result has underpaid the Contractor then, in addition to any costs that payable under clause 10.3, the Customer must pay to the Contractor the unpaid license fees and fees for in respect of Software Support Services that would have been payable had the correct license been acquired at the time that it was acquired.

MODULE ORDER FORM
MODULE 3 – LICENSED SOFTWARE

Box 1 Approved Purpose

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.1)	
Specify what purpose is the Licensed Software used for. If no other purpose is specified in this Box the Approved Purpose is the internal processing of the Customer's own data.	The Approved Purpose extends to use of the Licensed Software for the internal processing of the Customer's own data, as well as the data of Transport for NSW, NSW Trains and RailCorp.

Box 2 Class of Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.2)	
Specify the specific rights that are granted by the Contractor to the Customer to use the Licensed Software. The Class of Licence defines the Price, e.g. If the Licensed Software is licensed for X "Named Users", the Class of Licence must define what a "Named User" is. Examples of the types of issues that are included in the Class of Licence include: (a) the Licence Period; (b) number and type of user; (c) number, type or capacity of Hardware; or (d) any other licence restriction/right. Also specify whether the Customer is granted the right to transfer the Licensed Software to an outsourcer in accordance with clause 2.17. [Note: If this Box is not completed then the Contractor grants the Customer the default rights to use the Licensed Software and User Documentation as described in clauses 2.2 and 2.9 of Module 3.]	**REM Server Licences** Each Instance/Server • ICM Platform Licence - 2 licenses (main and backup site) • Application Server Licence – 4 licenses (two redundant servers per site) • Web Server Licence - 4 licenses (two redundant servers per site) **REM Gateway Licences** Each Server/Client • Incident Information Exchange-Gateway - Gateway - 4 licenses (two redundant servers per site) • Email-Gateway - 4 licenses (two redundant servers per site) • SMS-Gateway - 4 licenses (two redundant servers per site) **REM Extension Licences** Each Instance • Notifications Module – 2 instances • Document Management Module – 2 instances **REM Client and User Licences** Each Working Position/Client/User • Data Management Client – 5 working positions (node locked)

	• Incident Management Client – 50 working positions (node locked) • Named User – 2200 named users (incident management client/data management client/we client) **Definition Named User:** Named user is an active entry in the list of users maintained in the REM DMC Client.

Box 3 Designated Equipment

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.3)	
Specify the hardware platform/operating system combination upon which the Licensed Software is installed. [Note: Specify the type and version number of the operating system and capacity/model of the Hardware, especially if the Class of Licence is based on type or size of capacity of the Hardware.]	Use of the Licensed Software is not limited to any Designated Equipment for purposes of clauses 2 or 3 of Module 3. However, the parties will agree hardware and operating system requirements for the Licensed Software which will be the Designated Equipment for purposes of clause 8 of Module 3.

Box 4 Third Party Components

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.14)	
Third Party Components Specify if the details of any software components, plug-ins and other programs are owned by third parties. This should include name and version number of each Third Party Component. Specify if the Third Party Components are supplied by the Contractor: (a) as part of the Licensed Software; or (b) as a Reseller (in which case Box 11 must be completed) [Note: See clause 2.7 for details.] [Note: Open source software is not included within the definition of Third Party Component.]	The Licenses in Box 2, are owned by CNS Solutions & Support GmbH. Both CNS Solutions & Support GmbH and the Contractor are wholly owned subsidiaries of Frequentis AG. Accordingly, the Third Party Components are supplied by the Contractor as part of the Licensed Software.

Box 5 Extension of Period to Notice to Renew Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Licence Period (clause 2.6(a))	
If the Licence is not perpetual, then specify the number of days written notice prior to the end of each current Licence Period that the Contractor must give of the Price, payment arrangements and/or terms for any extended Licence Period or new Licence Period that is to commence immediately after the end of the current Licence Period. If no period is specified in this Box, the period is 30 days.	The Licence (REM 2016.1) is a perpetual license.

Box 6 Installation

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Installation (clause 3.1)	
Specify if the Contractor is responsible to install the Licensed Software.	Not Applicable. Support of integration and installation activities are not a part of the Services and Deliverables under this Customer Contract. These services and deliverables will occur in the Implementation & Maintenance Phase and will be governed by the Final Contract.
If the Contractor is responsible for installation of the Licensed Software: (a) specify the details of the Installation and the date of installation; and	Not Applicable.
(b) specify the Price for the installation, and when the Price is due.	
Installation (clause 3.3)	
Specify the date by which the access codes must be made available, if applicable. If a date is not specified, the access codes must be provided promptly following the date the Parties enter into the Customer Contract.	The REM system and codes must be delivered by the Contractor to the Customer at the end of the REM product release cycle, being 30 April 2016.

Box 7 First Release

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
First Release (clause 3.9)	
Specify if the Licensed Software or any New Release will be a First Release. If so, specify the any additional terms and conditions that apply to the First Release. If this Box is not completed, the Licensed Software and each New Release is deemed not to be a First Release.	Not Applicable.

Box 8 Right to Receive Updates and/or New Releases

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Updates and New Release (clause 4.1)	
Specify if the Contractor provides the Customer the rights to receive: (a) Updates; (b) and/or New Releases, as part of the Licence (as opposed to part of a separate Software Support Service under Module 5).	Not Applicable. Updates and New Releases will be provided as Services and Deliverables under the Implementation & Maintenance Phase and will be specified in the Final Contract.
Updates and New Release (clause 4.4(c))	
Specify the increased Licence Price when the Customer accepts the Update or New Release. If an increased Price is not specified, the Licence Price must not be increased for any Update or New Release provided during the Licence Period.	Not Applicable. Updates and New Releases will be provided as Services and Deliverables under the Implementation & Maintenance Phase and will be specified in the Final Contract.

Box 9 Warranties for Open Source Code

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Open Source Software (clause 5.2(b))	

If the software is Open Source Software: (a) specify the Open Source Licence that governs the use of the open source software; (b) specify whether the open source software is provided with the warranties that the Contractor provides in respect of Licensed Software, or whether the Contractor provides the open source software without any warranty (to the extent permitted by law)	The Parties acknowledge and agree that any Open Source Software incorporated in the Licensed Software will be governed by the terms and conditions of the Final Contract.

Box 10 Ancillary Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Training (clause 6.1)	
Specify if training services are to be provided.	The Contractor must provide system administrator training and application administrator trainings during the Contract Period in order to enable the Customer's Personnel to configure the Licensed Software.
If so, specify details, dates and the Prices of the training services, and when payment is due.	The scope of the system administrator training and application administrator trainings is to be clarified during the Detailed Design Phase. The Contractor acknowledges and agrees that the Contract Price includes a cost for providing the system administrator training and application administrator trainings.
Other Services (clause 6.2)	
Specify the details, times, Prices for ad hoc issue resolution or support service for the Licensed Software, and when payment is due. [Note: If Software Support Services are being provided for the Licensed Software under Module 5, do not complete this Box.]	Not Applicable.

Box 11 Business Models of the Reseller

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer

Reseller Provision of Licensed Software (clause 7.1)	
Are any of the Deliverables being provided by the Contractor in the capacity as a Reseller? If yes: (a) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller as Facilitator. [Note: Reseller as Facilitator means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(a).] **OR**	Not Applicable.
(b) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller with Pass Through Warranties. [Note: Reseller with Pass Through Warranties means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(b).]	

Box 12 Value Add Services

Details to be included from Module 3	**Order Details agreed by the Contractor and the Customer**
Acquisition through a Reseller (clause 7.3)	
Specify if the details of any value add services the Contractor is to provide, the Prices and when payment is due.	Not Applicable.

Box 13 Customer Maintains Records

Details to be included from Module 3	**Order Details agreed by the Contractor and the Customer**
Records (clause 10.1(a))	

Specify if and, if so, how the Customer must maintain records as to the locations of all copies of the Licensed Software and the usage of the Licensed Software.	Not Applicable. Records requirements will not apply until the Implementation & Maintenance Phase and will be specified in the Final Contract.
Records (clause 10.1(b))	
Specify the frequency that the Customer provides copies of the records under clause 10.1(a). If this Box is not completed the Customer must provide copies of the records ever six months.	Not Applicable.

Module 7 – Professional Services

Version 3.1

TABLE OF CONTENTS

Use Guidelines

This Module should be used when the Customer is buying the services of personnel with IT related skills where the Contractor's services are not subject to day to day supervision by the Customer.

See the Procure IT User Guide for more details.

This text is not to be used in interpreting the Module.

1. Agreed Terms and Interpretation

AGREED TERMS

The terms and conditions included in this **Module 7** form part of the Customer Contract when the Parties state that the Professional Services Module forms part of the Customer Contract in Item 8 of the General Order Form.

In this Module, unless the contrary intention appears:

1.1 **Exception** means the reasons that excuse the Contactor from being in breach of the Customer Contract in respect of the Services provided under this Module, as stated in clause 7.

1.2 **Professional Services** means the Services that are set out on the Module Order Form that are to be supplied by the Contractor to the Customer under this Module, which may include any information, communications or technology related service, including:

(a) strategy advice;

(b) development, enhancement or support of software (not otherwise provided for under Modules 4 or 5);

(c) writing reports;

(d) reviews or quality assurance activities;

(e) change management services;

(f) project management services;

(g) knowledge transfer services;

(h) other information, communications or technology related services agreed by the Parties which are provided under the direction and control of the Customer.

The term Professional Services does not include services provided under the direction, control and supervision of the Customer. These services are Contractor Services and are subject to Module 6 Contractor Services.

The term Professional Services does not include training services. These services are subject to Module 8 Training Services.

INTERPRETATION

1.3 Other capitalised words and expressions used in this Module are defined in Part 3 of the Agreement.

2. Professional Services Period

2.1 Unless otherwise agreed in the General Order Form or the relevant Module Order Form, the Professional Services must be provided for the Contract Period unless the Customer Contract is terminated earlier in accordance with its terms.

2.2 If no Contract Period is specified in the Order Documents and the Professional Services are provided on a time and materials basis, then the Professional Services will be provided from

the Commencement Date until either Party cancels the Professional Services by providing 30 days prior Notice in Writing to the other.

3. Scope of Professional Services

SCOPE

3.1 The Parties will set out in the Module Order Form or a PIPP the details of the Professional Services which may include:

(a) the Contract Period;

(b) the details of the Professional Services that the Contractor is to provide;

(c) the details of any Specified Personnel;

(d) the details of any Deliverables and their Contract Specifications;

(e) the location of where the Professional Services are to be provided;

(f) whether any Deliverable must undergo an Acceptance Test;

(g) the Price, expenses and any other charges that apply in respect of the Professional Services; and

(h) how the Prices, expenses and charges will be paid, including any Payment Milestones and whether the Professional Services are provided on a time and materials basis, fixed price or some other basis.

PROJECT IMPLEMENTATION AND PAYMENT PLAN (PIPP)

3.2 If there is no PIPP agreed at the time the Customer Contract is signed by the Parties, and it is stated on the Module Order Form that a PIPP is required, the Contractor must prepare a draft PIPP for the approval of the Customer prior to the commencement of the Professional Services. Within 5 Business Days of receipt of the draft PIPP the Customer must:

(a) approve the PIPP;

(b) provide written notice of any changes to the draft PIPP that it requires, and provided those changes are reasonable, the Contractor must update the PIPP and re-submit it for approval by the Customer.

3.3 Once the PIPP has been approved by the Customer it forms part of the Customer Contract and the Contract Specifications are updated accordingly.

REPORTING

3.4 The Contractor must monitor the progress of the Professional Service and provide the Customer with status reports at monthly intervals, or such other intervals as is agreed by the Parties which, at a minimum, include the following issues:

(a) the issues and risks that the Contractor recommends be pro-actively addressed to avoid delays;

(b) any actions that the Parties need to take, or decisions that need to be made, to ensure the provision of the Professional Services in accordance with the requirements of the Customer Contract, including any PIPP;

(c) the progress of the work against any project plan;

(d) the amounts charged, and amount of work in progress against the budget;

(e) whether it is anticipated that the budget is likely to be exceeded, and if so the reasons; and

(f) any other issues that the Parties agree should be included in the reports.

CUSTOMER DIRECTIONS

3.5 The Contractor must comply with all reasonable directions of the Customer as may be given to the Contractor from time to time in respect of the delivery of the Professional Services, provided that such directions are consistent with the requirements of the Customer Contract. Where such direction:

(a) causes the Contractor's costs to increase, the Customer must pay for any increase in the Contractor's costs at the Contractor's time and materials rates (calculated using the rates set out in the Customer Contract, or if none are stated, at the Contractor's then current commercial rates) plus any expenses; and

(b) causes the Contractor not to be able to meet any timetable for delivery, then the timetable must be extended to the extent that it is reasonable given the nature of the direction and the impact on the Professional Services.

3.6 Nothing in clause 3.5 affects the Contractor's right to exercise its own judgment and to utilise its skills as it considers most appropriate in order to achieve compliance with the Customer's reasonable directions or otherwise to comply with the Contractor's obligations under the Customer Contract.

3.7 Subject to otherwise complying with its obligations under the Customer Contract, the Contractor must exercise its independent discretion as to the most appropriate and efficient manner of providing the Professional Services and satisfying the Contractor's obligations under this Customer Contract.

EMPLOYEE RELATIONSHIP

3.8 The Contractor undertakes to comply with all Statutory Requirements in relation to itself and any of its employees or contractors, including in relation to workers compensation, payroll tax, income tax, fringe benefits tax, PAYG tax, group tax, superannuation contributions, annual leave, long service leave and personal leave awards, industrial instruments and any other employment entitlement.

3.9 The Contractor acknowledges and agrees that:

(a) it is solely responsible for the obligations in clause 3.8; and.

(b) neither it, nor its personnel have, pursuant to this Customer Contract, any entitlement from the Customer in relation to any form of employment or related benefit.

4. Acceptance Tests and Use

4.1 Where the Professional Services are for the creation of a specific Deliverable for which the Parties have agreed that the Deliverable is to undergo Acceptance Tests then:

(a) the Customer must not use any part of the Deliverable for its business purposes and/or in a production environment without first undertaking Acceptance Tests in accordance with clause 10 of Part 2; and

(b) it is acknowledged and agreed by the Customer that if the Customer uses the Deliverable for its business purposes and/or in a production environment before the Deliverable has passed its Acceptance Tests in accordance with clause 10.9 of Part 2

(as opposed to where the Deliverable is merely deemed to have passed its Acceptance Tests under clause 10.13) the Customer is taking a significant risk in using untested Deliverables, and accordingly the Contractor is not liable for any loss, damage or expense caused by such use of the Deliverable.

5. Restraint

5.1 The Customer must not, without the prior written consent of the Contractor, whether on its own behalf or on behalf of any other person and in any capacity:

(a) encourage any of individual who has performed any Professional Services, to:

(i) stop working for or providing services to the Contractor; or

(ii) work for or provide services to the Customer, any Agency or Department or any other person;

(b) employ, contract, or enter into any arrangement, to receive the benefit of the services of the individual who has performed any Professional Services,

for the following restraint periods:

(c) during the period that the individual performed the Professional Services and a period of 12 months thereafter;

(d) during the period that the individual performed the Professional Services and a period of 9 months thereafter;

(e) during the period that the individual performed the Professional Services and a period of 6 months thereafter;

(f) during the period that the individual performed the Professional Services and a period of 3 months thereafter;

(g) during the period that the individual performed the Professional Services.

5.2 Clause 5.1 is to be construed and have effect as the number of separate restraints that arise by separately combining each of the subclauses in 5.1(a) and (b)(i) and (ii) above with the restraint periods listed in each of the subclauses in (c) to (g) above. Each of the covenants that result from a combination of the restraints in subclauses 5.1(a), (b)(i) and (ii) with the restraint periods in subclauses (c) to (g), constitute and are to be construed as having effect as separate, distinct, severable and independent provisions from the other covenants, but cumulative in overall effect. If any of the covenants or parts of the covenants resulting from the operation of this clause, are unenforceable they will be severed from the remaining enforceable covenant or part thereof.

5.3 The Customer agrees that the remedy of damages may be inadequate to protect the interests of the Contractor from a breach of the Customer's obligations under this clause 5 and the Contractor is entitled to seek and obtain injunctive relief, or any other remedy, in any court.

5.4 A general solicitation for employment which is placed in good faith such as a newspaper advertisement shall not constitute a breach of clause 5.1.

5.5 The Parties agree that the restrictions in clauses 5.1 to 5.4 are necessary to protect the legitimate interests of the Contractor.

6. Specific Warranties

SCOPE

6.1 Where the Professional Services are provided on a fixed price basis:

(a) the Contractor warrants that any Deliverable (other than any Customer Supplied Item) will meet the Contract Specifications in all material respects during the Warranty Period, subject to the Exceptions; and

(b) if an unmodified version of the Deliverable (other than any Customer Supplied Item) fails to perform in accordance with the requirements of the Customer Contract and the Customer provides the Contractor with written notice of the Defect within the Warranty Period, then the Contractor may, at its option, promptly remedy those Defects, implement a Workaround, or replace the relevant part of the Deliverable, at its own expense, or refund the Price payable for the deficient Deliverable. Any remedy that is implemented is warranted only during the remainder of the Warranty Period.

6.2 Owing to the nature of the subject matter, but subject to clauses 6.1, 6.3, 6.4 and 7, the Contractor expressly excludes any warranty that:

(c) any Deliverable will be error free;

(d) any Deliverable will operate without interruption;

(e) it will correct all program errors;

(f) any Deliverable will be compatible with any hardware, software or data not supplied by the Contractor (except as specified in the Contract Specification);

(g) any Deliverable will meet the Customer's requirements.

6.3 The Customer must provide reasonable assistance to the Contractor in order to assist the Contractor to identify and resolve the Defect, including installing patches and Workarounds.

6.4 The Contractor warrants that, subject to the Exceptions, from the Commencement Date until the end of the Warranty Period in relation to the Professional Services that the Contractor will provide the Professional Services in accordance with the requirements of the Contract Specifications in all material respects and with due care and skill.

7. Exceptions

7.1 The Contractor is not liable for any breach of the Customer Contract which arises as the result of:

(a) any Customer Supplied Item not operating in accordance with its documentation or the requirements in this Customer Contract;

(b) modifications to any Deliverable that were effected or attempted by a person other than the Contractor or its authorised representative, other than where such modifications were recommended by the Contractor;

(c) any act, error, fault, neglect, misuse or omission of the Customer;

(d) damage caused by the operation of the Deliverable other than in accordance with recommended operating procedures or otherwise than in accordance with the directions or recommendations of the original IP owner, authorised distributor or the Contractor;

(e) any Virus, denial of service attack or other malicious act that adversely affects the Software Solution, except to the extent that:

(i) the attack or malicious act is an attack or malicious act of the Contractor; or

(ii) the Contract Specifications include a requirement to protect against Viruses, denial of service attacks or other malicious acts, and the Customer's damages are caused solely by a failure to meet that obligation in the Contract Specification;

(f) improper use or mismanagement by the Customer; or

(g) an Event.

7.2 Where the Contractor has been requested to provide any remedy and the item that was requested to be remedied is determined not to be a Defect (or to be a Defect in a Customer Supplied Item) then the Contractor is entitled to charge the Customer for the costs and expenses (calculated using the rates set out in the Customer Contract, or if none are stated, at the Contractor's then current commercial rates) that arise out, of or in connection with identifying and attempting to remedy that item.

MODULE ORDER FORM
MODULE 7 – PROFESSIONAL SERVICES

Box 1 Details of Professional Services

Details to be included from Module 7	Order Details agreed by the Contractor and the Customer
Scope (clause 3.1)	
Specify the Professional Services (other than Training Services) which are to be provided, including: (a) the Contract Period; (b) the details of the Professional Services that the Contractor is to provide; (c) the details of any Specified Personnel; (d) the details of any Deliverables and their Contract Specifications; (e) the location of where the Professional Services are to be provided; (f) whether any Deliverable must undergo an Acceptance Test; (g) the Price, expenses and any other charges that apply in respect of the Professional Services; and (h) how the Prices, expenses and charges will be paid, including any Payment Milestones and whether the Professional Services are provided on a time and materials basis or some other basis. [Note: These details can be put on a PIPP instead of being including on this Module Order Form. If the details are put on a PIPP, insert "Details of the Professional Services (other than Training Services) are set out in the PIPP".]	As specified in the PIPP set out in Annexure B to the Customer Contract.

Box 2 Requirement for a PIPP

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Project Implementation and payment Plan (PIPP) (clause 3.3)	
Specify if the Contractor is required to provide a PIPP, if no PIPP is attached to this Customer Contract at the Commencement Date. [If this Box is not completed, the Contractor is not required to provide a PIPP.]	As specified in the PIPP set out in Annexure B to the Customer Contract.

1. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number	1
Date of Change Request	10 February 2016
Originator of need for Change Request	Customer
Proposed Implementation Date of Change	1 December 2015
Date of expiry of validity of Change Request	Not Applicable
Contractor's estimated time and cost of evaluation	Not Applicable
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**	Not Applicable

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**
Sydney Trains	*1*	*See below.*	*Bob Allum*

DETAILS OF CHANGE REQUEST

Summary

The current Project Implementation and Payment Plan (PIPP) provides for IMS Detailed Design (Release 1) Phase, as well an Initial Implementation (Release 1) Phase encompassing the software license and preliminary build activities for the Contractor's REM 2016.1 product.

Under the existing PIPP, funding for the Initial Implementation Phase consisting of certain preliminary design and build activities for REM2016.1 is due to conclude on 30 April 2016. This is when the REM2016.1 software will be provided to the Customer by the Contractor.

The Detailed Design (Release 1) Phase has taken longer than originally contemplated by the Parties, thereby resulting in the Contractor incurring additional costs to retain on site personnel to finalise the Detailed Design (Release 1) Phase. Additionally, in order to ensure that the project critical path is met, the Contractor commenced certain Initial Implementation (Release 1) Phase activities that were not contemplated by the existing scope of the PIPP. Accordingly, this Change Request is required to:

(a) amend the scope of this Customer Contract, as further described in the "Scope" section below; and

(b) provide funding for the Contractor in relation to this scope change.

The parties are aiming to be in a position to execute an Implementation and Maintenance Agreement ("**Final Contract**") by the end of February 2016.

SCOPE

The scope of this CR1 comprises:

(a) the refinement of the Detailed Design (Release 1) Phase Deliverables;
(b) additional funding to complete the revised Detailed Design (Release 1) Phase scope; and
(c) an enhanced Initial Implementation (Release 1) Phase scope.

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

The effects of CR1 are:

(a) updates to the Deliverable descriptions in section 5.4 of the PIPP to reflect the lessons learnt during the development of the Deliverables for Release 1. These mirror the modified Detailed Design descriptions in the recent variation to the Ajilon Detailed Design Agreement. This ensures the Contractor's Deliverables align with the Deliverables to be provided by Ajilon during Release 3;
(b) incorporation of 4 additional "gap features" identified in the DTBRS;
(c) modification of the Entry Criteria for the Initial Implementation (Release 1) Phase;
(d) enhancement of the Initial Implementation (Release 1) Phase Deliverables;
(e) setting up all necessary hardware (being Contractor owned hardware) and systems to commence testing of REM2016.1. (Note: testing is to be conducted under the terms of the Final Contract); and
(f) modification of Customer Supplied Items (CSI) to reflect revised Contractor requirements.

EFFECT OF CHANGE ON PROJECT TIMETABLE

No Change. The amendments detailed in this Change Request are necessary to accord with the existing project schedule.

New PIPP (annexed)

As the changes to the PIPP are extensive, the current PIPP is replaced in its entirety (see Attachment 1 to this Change Request).

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

The effect of CR1 is to increase the value of the Detailed Design Agreement by [redacted], resulting in the revised value of [redacted]. Payment shall be in accordance with the following milestones:

Initial Payment due upon Customer execution of CR1	[redacted]
Progress Payment due on 31/01/2016	[redacted]
Progress Payment of due on 29/02/2016	[redacted]
Final Payment due upon receipt by the Customer of REM2016.R1	[redacted]

The Parties acknowledge and agree that:

(a) certain Deliverables and Services originally contemplated by the Parties as being comprised within the scope of the Final Contract, the charges for which were included in the Contractor's BAFO submission of 20 March 2015 ("**BAFO**"), have been bought forward in whole or in part within the scope of this Customer Contract ("**Expedited Deliverables**");

(b) the BAFO is no longer wholly reflective of the revised scope of the ROC Technology Solution, due to the increased quantity of certain Deliverables and changes to the ROC Technology Solution delivery approach and schedule;
(c) without limiting clause 18.4 of the Additional Conditions, that if selected as a preferred supplier to implement or support any component of the System:

i. the Contractor will, to the extent applicable, reduce the cost of the Final Contract accordingly to reflect that the Expedited Deliverables are included in the Contract Price for this Customer Contract and will not be re-charged to the Customer by the Contractor in relation to the build phase of the Final Contract; and

ii. the Contractor and the Customer will negotiate in good faith the difference in scope between the BAFO and the Final Contract and an updated pricing proposal will be provided by the Contractor to the Customer to reflect this change in scope.

CHANGES TO CSI

CSI obligations of the Customer have been reduced to reflect the decreased IT requirements of the Contractor.

CHANGES TO CUSTOMER PERSONNEL

No change.

CHANGES TO CUSTOMER ASSISTANCE

No change.

PLAN FOR IMPLEMENTING THE CHANGE

Not applicable. Detailed Design (Release 1) Phase Deliverables have been finalised and reflect the changes proposed in this Change Request. Initial Implementation (Release 1) Phase activities augment the activities currently being performed by the Contractor.

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

Not Applicable.

Responsibilities of the Contractor

Refer to the PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Customer

Refer to the PIPP set out in Attachment 1 to this Change Request.

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

None.

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

None.

EFFECT ON USERS OF THE SYSTEM/SOLUTION

None.

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Deliverable descriptions were amended to reflect lessons learnt during Detailed Design (Release 1) Phase. These now align with the documentation Deliverable descriptions in the Detailed Design agreement the Customer has in place with Ajilon (System Integrator).

EFFECT ON TRAINING

Refer to the PIPP set out in Attachment 1 to this Change Request.

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

None.

ASSUMPTIONS

No change to the assumptions currently included in the PIPP.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

The following documents form part of this Change Request:

(a) the revised PIPP set out in Attachment 1 to this Change Request; and
(b) the amended Module 3 Order Form set out in Attachment 2 to this Change Request.

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

Box 10 (Ancillary Services) of the Module 3 Order Form is amended as detailed in the updated Module 3 Order Form set out in Attachment 2 to this Change Request.

AUTHORISATION

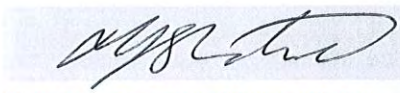
Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability



Signature of Customer Representative

MIKE SCHUBERT

Print name

23/2/2016

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

CHRISTIAN DORNER

Print name

25/2/2016

Date

Attachment 1 – PIPP

ANNEXURE B TO THE CUSTOMER CONTRACT

Schedule 12: PIPP

1. Introduction

1.1. The Customer is establishing a new Rail Operations Centre (ROC).

1.2 The Customer wishes to implement new technologies at the ROC which will provide enhanced capability to improve key 'day of operations' processes (the ROC Technology Solution).

1.3 The ROC Technology Solution consists of the development of four new technology systems (or system capabilities). These systems include:

a) Day of Operations Timetable System (DTTS);

b) Incident Management System (IMS);

c) Customer Information Management System (CIMS); and

d) Operational Visual Display System (which will be tendered at a later date).

1.3A The Contractor has been selected as the contractor responsible for the Services and Deliverables specified in this PIPP in respect of section 1.3(b).

1.4 By implementing the ROC Technology Solution the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail – Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay** - Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15 % by 2018.
Increased operational performance and opportunity for timetable enhancements – Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay** – Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the service back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The program shall reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer information during delays – Improving the customers' ability	**Reduced Customer Perceived Delay** - Improvements to the timeliness, relevance and consistency of customer information, particularly during disruption, will reduce the customer's perceived time of their journeys by 11% by

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to make decisions about their transport options.	2018.
Better realising the benefits of future investments in rail capacity – Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function** - The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc.). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC Infrastructure design requirements.
A new world class operating centre and culture – Transforming the way 'day of operations' activities are managed within Sydney Trains, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment** - The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service – Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX** - The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability – Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX** - enabled by new systems, process improvements and colocation.

(together, the ROC Technology Solution Objectives).

1.5 To allow the Customer to better evaluate the Contractor's Solution for the ROC Technology Solution, the Customer wishes to engage the Contractor to undertake the Services and Deliverables specified in sections 4, 5 and 6 of this PIPP including, among other things, the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase (the **"Project"**).

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of the Project.

1.7 The sequence of the ROC Technology Solution has been staged as follows:

a) the RFP which solicited the solution being proposed by the Contractor;

b) the High Level Solution Design Phase which assessed the veracity of the proposed solution and the capability of the Contractor. The Deliverables of the High Level Solution Design Agreement represent the core documents required by the Contractor to provide the Detailed Design Deliverables;

c) the Project which is undertaken during the Detailed Design Phase; and

d) subject to the Customer's acceptance of the Contractors performance and related Deliverables under the Detailed Design (Release1) Phase and Initial Implementation

(Release 1) Phase (including negotiation of a Final Contract that may encompasses a number of the obligations of this Customer Contract) the Customer may, at its sole discretion, notify the Contractor of its intention to transition to the Final Contract. In such situation, this Customer Contract will lapse concurrently to the commencement of the Final Contract in accordance with clause 18.4 of the Additional Conditions.

1.8 On or around 10 August 2015 the Parties entered into a letter of intent (**LOI**) under which the Contractor supplied certain services and deliverables (**LOI Deliverables**) that are within the scope of the Deliverables that are to be supplied under this Customer Contract. The Parties acknowledge and agree that:

a) the LOI has been superseded by this Customer Contract and the LOI is of no further effect:

b) any sums paid under the LOI are taken to have been paid under this Customer Contract;

c) the terms of this Customer Contract apply to the LOI Deliverables; and

d) the LOI Deliverables are deemed to have been supplied under this Customer Contract and are Deliverables for the purposes of the Customer Contract.

2. Overview of scope of work and Project delivery model

2.1 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional services and deliverables agreed by the parties as the responsibility of the Contractor;

b) perform all other services functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i. reasonably related to the services or deliverables described in this PIPP; or

ii. reasonably required for the supply of the Deliverables described in this PIPP; and

c) complete the Project, and supply the Services and Deliverables in the following phases:

i. the Project Preparation Phase;

ii. the Detailed Design (Release 1) Phase and

iii. the Initial Implementation (Release 1) Phase

3. Definitions

Capitalised terms which are not defined in this document have the meaning given to them in the Order Form or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

Acceptance Criteria means the criteria set out in Appendix G.

Build Phase means all activities required to deliver the Solution under the Final Contract

CIMS has the same meaning given to that term in the Additional Conditions.

CNS means CNS Solutions and Support GmbH;

Contract Price has the meaning given to that term in section 12.1.1 of this PIPP.

Delivery Risks means the actual or potential problems, issues or risks that may adversely affect the Contractor's ability to perform its obligations relating to the Project or the ROC Technology Solution.

Detailed Design means the Contractor's design of its Solution that has been developed as a Deliverable under the Customer Contract including the Detailed Design Documents.

Detailed Design Document means each document that is developed by the Contractor as part of the Detailed Design Phase and approved by the Customer.

Detailed Design Phase means the phase of work that includes the Detailed Design (Release 1) Phase and work associated with Release 2 and Release 3.

Detailed Design (Release 1) Phase means the phase described in section 5 of this PIPP.

Dispute means any dispute or disagreement between the Contractor and an Other Contractor (or a dispute between Other Contractors) arising out of or in connection with the Project. A reference to a Dispute, where the Dispute is partly resolved, refers to the unresolved part of the Dispute.

DTBRS means Detailed Technical Business Requirements Specification, as set in Appendix A (Part 2) of this PIPP;

DTTS has the same meaning given to that term in the Additional Conditions.

Effective Date means the date the Contractor undertook early services under the letter of intent dated 10 August 2015

Environment has the same meaning as 'Customer Environment' in the Additional Conditions.

Entry Criteria means for a phase, the criteria that must be met before the Contractor is entitled to commence the work for that phase, as set out in this PIPP.

Final Contract has the same meaning given to that term in the Additional Conditions.

High-Level Design has the same meaning as the term in the Additional Conditions.

High Level Solution Design Agreement means the contract entered into between the Customer and the Contractor for the design services (which includes the High-Level Design) on or about 24 December 2014.

High Level Solution Design Documents means each document (including the High-Level Design) that is developed by the Contractor as part of the High Level Solution Design Phase and approved by the Customer as CSI.

High Level Solution Design Phase means the phase preceding the Detailed Design Phase.

Implementation & Maintenance Phase means the phase, if the Contractor is selected, for the implementation and maintenance of the Solution.

Initial-Implementation (Release 1) Phase means the phase described in section 6 of this PIPP.

IMS has the same meaning given to that term in the Additional Conditions.

Initial Requirements means the requirements set out in Appendix A (Part 1) of this PIPP

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Issues Register has the meaning given to that term in section 7B.4.1 of this PIPP.

Milestone Acceptance Form means the acceptance forms in the same or substantially the same form as Appendix E.

Other Contractors has the same meaning as 'Interfacing Contractor' in the Additional Conditions.

PCAR means the Project Concept and Review document, as set out in Appendix A (Part 2) of this PIPP.

Personnel means, as applicable, any director, officer, employee, agent, contractor, sub-contractor or professional advisers engaged in, or in relation to, the performance or management of the Customer Contract.

Project has the same meaning given to that term in section 1.5 of this PIPP.

Project Preparation Phase means the phase described in section 4 of this PIPP.

Project Schedule means the schedule set out in Appendix C which sets out the delivery dates for the Services and Deliverables during the Detailed Design Phase.

Release 1 means the implementation of and integration of IMS into the Customer's legacy environment.

Release 2 means the implementation of and integration of CIMS and DTTS into the Customer's legacy environment.

Release 3 means the integration of IMS, CIMS and DTTS systems with one another in the Customer's environment.

REM IMS means Rail Emergency Management Information Management System.

REM 2016.1R1 means the Licensed Software upgraded by the Contractor to reflect the Customer's Requirements, as described in the Technical Documents.

Requirements means the Initial Requirements as updated by the Updated Requirements.

Requirements Variation has the meaning given to that term in section 7.2.1 of this PIPP.

RFP has the same meaning given to that term in the Additional Conditions.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC Technology Solution has the meaning given to that term in section 1.2 of this PIPP.

SAD means the Solution Architecture Document, as set out in Appendix A (Part 2) of this PIPP.

Solution has the meaning given to that term in section 7.1.8 of this PIPP.

System Integrator means Ajilon Australia Pty Ltd (ABN 25 076 517 354).

Technical Documents means the following Documents set out in Appendix A (Part 2) of the PIPP:

a) Release 1 Architecture Specification for REM Rel 2016.1 V3.0;

b) Release 1 Functional Specification for REM Rel 2016.1 V3.0;

c) Release 1 Integration Specification for REM Rel 2016.1V3.0; and

d) Updated Release 1 Product Gap Analysis (High level business requirements) V5.0.

Updated Requirements means the Initial Requirements that are updated in the Detailed Design, including the Technical Documents, SAD and DTBRS.

4. Project Preparation Phase

4.1 Overview and purpose of Phase

4.1.1 The purpose of the Project Preparation Phase is to validate the Contractor's strategic intent and the Solution scope.

4.1.2 During the Project Preparation Phase, plans and schedules are prepared and Project resources committed.

4.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Project Preparation Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Project Preparation Phase are approved by the System Integrator,

on or before relevant date(s) specified in the Project Schedule.

4.2 Entry Criteria

4.2.1 The Entry Criteria for the Project Preparation Phase is specified in the table below:

#	Criteria	Description
1.	Customer Contract execution	The Contractor and the Customer have executed the Customer Contract.
2.	Acceptance of High Level Solution Design Deliverables	The Customer has accepted the Deliverables submitted under the High Level Solution Design Agreement or, where conditional acceptance was provided by the Customer, the Contractor has initiated remediation of the conditionally accepted Deliverables.
3.	Personnel	The Contractor provides details of the Contractor Personnel proposed for the Detailed Design (Release 1) Phase, as well as the Final Contract.

4.3 Services

4.3.1 The Contractor must supply the following Services as part of the Project Preparation Phase:

#	Description
1.	Prepare for Project kick-off, including: a. engaging the Personnel with the required skill sets to perform the Contractor's obligations under this PIPP; and b. collating and confirming the names and contact details of those Personnel with the Customer.

2.	All things necessary to prepare for the workshops to be conducted in the Detailed Design (Release 1) Phase, including: a. planning for the Detailed Design (Release 1) Phase workshops; b. assigning the Personnel with the required skill sets to facilitate the Detailed Design (Release 1) Phase workshops; c. requesting Customer Personnel based on required skill sets to attend Detailed Design (Release 1) Phase workshops; and d. preparing materials to facilitate the Detailed Design (Release 1) Phase workshops.
3.	Assess (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project and the ROC Technology Solution) and identify: a. any issues; and b. risks that may arise during the course of the Project and the ROC Technology Solution.
4.	Review and update the Issues Register to accurately and comprehensively identify all of the issues and risks that the Customer has identified relating to the Project and the ROC Technology Solution.
5.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Project Preparation Phase.
6.	Provide a list of technical requirements for Detailed Design (Release 1) Phase (e.g. remote access).
7.	Participate in the Customer's induction training or other courses as may be required, from time to time.
8	All things necessary to develop and supply the Deliverables described in section 4.4.

4.3.2 The Contractor must supply the Services which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.4 Deliverables

4.4.1 The Contractor must supply the following Deliverables as part of the Project Preparation Phase:

#	Deliverable	Description	Approver
1.	Detailed Design (Release 1) Phase workshops and planning documents	The following materials required to participate in the workshops required during the Detailed Design (Release 1) Phase. a. workshops and playback schedules; b. Project Schedule (including delivery dates for each Deliverable); c. pro forma workshop agenda; d. list of Contractor participants; and e. list of Customer participants roles.	The Customer (or its nominee)

2.	Templates and Standards	Agreement of Detailed Design documentation templates to be used by the Contractor.	The Customer (or its nominee)
3.	Detailed Design Phase Deliverables	Finalisation of the agreed list of Detailed Design (Release 1) Phase Deliverables that were conditionally accepted by the Customer during the High Level Solution Design Phase.	The Customer (or its nominee)
4.	Personnel	The Customer must approve the list of Specified Personnel proposed for the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase	The Customer (or its nominee)

4.4.2 The Contractor must supply the Deliverables which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.5 Customer approval

4.5.1 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Project Preparation Phase in accordance with Additional Condition clause 5.

5. Detailed Design (Release 1) Phase

5.1 Overview and purpose of Detailed Design (Release 1) Phase

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design all of the Requirements (based on the Initial Requirements) and develop Detailed Design(s) for Release 1 of the ROC Technology Solution.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase are approved by the Customer (or its nominee),

on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Previous Phase Discharged	All Services that the Contractor is required to supply during the Project Preparation Phase have been supplied.
2.	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
1.	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Contractor as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensure all required Contractor Personnel are present at the meeting(s); c. chairing and presenting the Project meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtain participant approval of contents.
2.	Participate in all necessary workshops with the Customer, the System Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes in those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
3.	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
4.	Develop a Detailed Design for the ROC Technology Solution for Release 1.
5.	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Contractor's configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of the ROC Technology Solution Release 1 to be implemented is understood by all parties.
6.	Conduct a risk management workshop with the Customer, the System Integrator and all relevant Customer stakeholders to identify and agree on risks to the ROC Technology Solution Release 1.
7.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Detailed Design (Release 1) Phase.
8.	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project) to enable the Other Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4.
9.	All other things necessary to develop and supply the Deliverables described in section

5.4 and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Deliverables

5.4.1 The Contractor is responsible for the following Deliverables with appropriate input from the System Integrator. Refer to the Appendix F for allocation of accountabilities and responsibilities.

5.4.2 The Transformation and Change Deliverables (as specified below in section 5.4.4.) are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Contractor during the High Level Solution Design Phase.

5.4.3 Where the Contractor must contribute to a Deliverable specified in section 5.4.4, the Contractor must work with, contribute to and provide all reasonable assistance requested by the System Integrator to complete the relevant Deliverable.

5.4.4 The Contractor must, in collaboration with the Other Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase:

#	Deliverable	Description	Approval
Technology Deliverables			
1.	Updated High Level Solution Design	Contribute to the updating of the High-Level Design Deliverable being developed by the System Integrator. The Updated High Level Solution Design must be updated to reflect the findings by the Contractor and System Integrator during the Detailed Design (Release 1) Phase and be based in the High Level Design submitted by the Contractor during the High Level Solution Design Phase.	The Customer (or its nominee)
2.	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms & technology required to deliver the functional & non-functional requirements. The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. Document Overview; b. Document Inputs; and c. Phase Scope; Systems architecture: a. High Level Conceptual Overview; b. Level 2 Business Processes; c. Application Usage View;	The Customer (or its nominee)

		d. System Integration View; e. Application Structure View; f. Information Architecture (including Reference data requirements); g. Infrastructure Usage View; h. Implementation and Deployment View; and i. Manual Integration; Rationale and justification for detailed design architectural approach: a. Rationale; b. Architecture Risks; c. Architecture Issues; d. Architecture Constraints; e. Architecture Assumptions; f. Architecture Decisions; and g. Architecture Dependencies;	
3.	Release 1 Functional Specification	The Release 1 Functional Specification defines the system's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS that shall be developed by the Customer during Detailed Design. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)
4	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1 Phase. The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability; e. manageability;	The Customer (or its nominee)

		f. performance; g. portability; h. reliability; i. reporting; j. scalability; k. security; and l. usability.	
5.	Release 1 Integration Specification	The Release 1 Integration Specification describes the high level integration points between the REM IMS and other systems. A detailed interface specification for each interface will be created by the Systems Integrator during the Build Phase. The following subjects are included in the Release 1 Integration Specification, one entry for each integration service : a) high level data flows between applications to support the business processes; b) data objects required by consumer – request; c) data objects available from consumer – response; and d) data object transformations required. The Release 1 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each interface to be created by the Systems Integrator during the Build Phase will describe the relevant Acceptance Criteria for each interface.	The Customer (or its nominee)
6.	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)
7.	Release 1 Data Management Plan	This document defines: a) the design, build, control and data management activities required to ensure data quality of all data (reference data,	The Customer (or its nominee)

		master data and transactional data) within REM IMS, based on business rules provided by the Customer, and effective and efficient system integration of REM IMS with other Customer systems; b) a high-level approach to management of all data within REM IMS which aligns with the approach outlined in the SAD.	
8.	Release 1 Data Technical Analysis Outputs	Contribute to Release 1 Data Technical Analysis Outputs must include: a. Data Requirement Classifications (Master data, Migration Data, BI data); b. Data Migration Requirements and Rules; and c. Data quality definition (at data attribute levels). Release 1 Data Technical Analysis Outputs also includes: 1. for each type of reference data and master data used by REM IMS (as appropriate): a) the real-world object type represented by that data set; b) the recommended data maintenance method(s) in REM IMS; c) the relevant SME(s), functional owner(s), source of requirement and/or Customer source from which the data may be obtained; d) whether REM IMS can play the role of DMA source for that data; e) the volatility of that data; and f) data translations (if any) required to integrate with existing Customer systems 2. for each type of master or reference data requested by REM IMS from other Customer systems: a) what data is required in the request and response messages; b) the business rules governing each message; and c) how those business rules are enforced; 3. for each type of transactional data flowing between REM IMS and another system (in either direction): a) the source and target systems; b) the message type and message header type; c) any encryption, security or certification considerations; d) the methods used to handle non-compliant data in the source system; e) any record selection filters required; and f) any record level transformations required.	The Customer (or its nominee)
9.	Updated Technology Implementation	Contribute to the development of the Updated Technology Implementation Strategy being developed by the System Integrator. The Updated Technology Implementation Strategy shall be	The Customer (or its

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	Strategy	baselined against the Technology Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the ROC Technology Solution, including, at a minimum: a. personnel & organisation; b. implementation approach, including: i. releases; ii. system verification and validation; iii. system change management; iv. release & deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for 'go-live'; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function.	nominee)
10.	Release 1 Technology Implementation Plan (Template)	The Release 1 Technology Implementation Plan (Template) will be developed and agreed. The plan will outline the plan approach for the roll out of the relevant components for Release 1. The final version of Release 1 Technology Implementation Plan will be developed during the Build Phase and provide a detailed plan and schedule of activities to deploy the Solution into the Environment. It must address training, development of, and installation of the REM IMS into the Environment, cutover and roll back. Note: The final version must be provided at least 40 Business Days prior to the anticipated deployment date for Release 1.	The Customer (or its nominee)
11.	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the System Integrator. The Technology Test Strategy refers to the program test framework and must include the following: a. Introduction – Describing the purpose and	The Customer (or its nominee)

		objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability. Assumptions, test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document Revision & History; and i. Approvals.	
12.	Updated Project Management Plan	Contribute to the development of the Updated Project Management Plan (UPMP) being developed by the System Integrator. The UPMP shall be based on the project management plan submitted by the Contractor during the High Level Solution Design Phase and updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The UPMP must specify, as a minimum, the following: a. current project status; b. project overview; c. scope & deliverables; d. solution approach, including: I. architecture & phase approach; II. organisation Change management; and III. delivery approach; e. budget & schedule; f. dependencies; g. roles & responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 7.4; and	The Customer (or its nominee)

		k. key risks & issues.	
13.	RACI	Contribute to the RACI Deliverable being developed by the System Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Other Contractors and the Customer. Note an initial draft of the Detailed Design document deliverables RACI is listed in Appendix F.	The Customer (or its nominee)
14.	Agreed Final Contract	The Final Contract will incorporate certain detailed design activities. The Final Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor
15.	Detailed Implementation & Maintenance Phase PIPP	The Detailed Design, Implementation and Support PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	The Customer and Contractor
16.	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)
17.	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the System Integrator. The Release 1 System Test Plan describes how the testing will be delivered for the Release 1 System Test phase and must include: a. Test plan identifier; b. References; c. Introduction; d. Test Objectives; e. Test items; f. Software risk issues; g. Features to be tested and traceability; h. Features not to be tested and reasons;	The Customer (or its nominee)

		i. Approach including the use of stubs, simulators etc; j. Item pass/fail criteria (if different from Strategy); k. Suspension criteria and resumption requirements (if different from Strategy); l. Test deliverables; m. Environmental needs; n. Staffing and training needs (if different from Strategy); o. Responsibilities; p. Schedule of tasks and assigned staff; q. Planning risks and contingencies; r. Approvals; and s. Glossary.	
18.	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the System Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)
19.	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the System Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. Booking and reserving test systems; b. Tracking environment changes; c. Managing environment contention; d. Code/Defect management (Code promotion processes); e. Environment scheduling; f. Configuration tracking; g. Data Management (Extracts, transforms loads);	The Customer (or its nominee)

		and h. Managing interdependent projects.	
Transformation and Change Deliverables			
20.	Operating Model	Contributing to the development of the Operating Model being developed by the System Integrator. The Operating Model must document and /or identify: a. best practice levels 2-4 process flows; and b. capability gaps in systems and processes. The process model will conform to best practice principles. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation. Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Best practice process flows Deliverable description:** The best practice process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following: a. best practice levels 2-4 process flows; b. validation of processes against real life scenarios . **Capability gaps in systems and processes deliverable description:** Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended best practice process flows to confirm the changes to processes and capabilities. The key focus of this deliverable will be on the level 4 gaps and/or variations in processes as dictated by the out of the box technology processes.	The Customer (or its nominee)

21.	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)
22.	Change Impact Analysis (Release 1)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions (note updated assumptions section): a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes within the ROC.	The Customer (or its nominee)

		A Change Impact Analysis will accompany the Release 1.	
23.	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the System Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)

5.4.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6. Initial Implementation (Release 1) Phase

6.1 Overview and purpose of Initial Implementation (Release 1) Phase

6.1.1 The purpose of the Initial-Implementation (Release 1) Phase is to:

a) enable the Contractor to commence the development and implementation of the Requirements into the REM product road-map so that the next release of the Licensed Software can fulfil the specifications and functionality specified in the Technical Documents; and

b) ensure the Licensed Software is available for testing in the System Integration Test Environment (SIT).

6.1.2 The scope of the Services and Deliverables under the Initial Implementation (Release 1) Phase explicitly excludes integration of the Licensed Software into the SIT environment, testing on-site and adaptation of the interfaces with Other Contractors' software.

6.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Initial Implementation (Release 1) Phase are supplied and completed;

b) all Deliverables that it is obliged to supply under Initial -Implementation (Release 1) Phase are approved by the Customer (or its nominee); and

c) the Licensed Software delivered under section 6.4 includes each of the Updated Requirements,

on or before the relevant date(s) specified in the Project Schedule.

6.2 Entry Criteria

6.2.1 The Entry Criteria for the Initial Implementation (Release 1) Phase is specified in the table below:

#	Criteria	Description

BC

1.	Detailed Design (Release1) Phase completed to necessary level to start the Initial Implementation (Release 1) Phase	All Services that the Contractor is required to supply during the Detailed Design (Release 1) Phase have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1) Phase.
2.	Previous Phase Deliverables Completed	The Customer has Accepted all Deliverables supplied in the Detailed Design (Release 1) Phase or, in the Customer's sole and absolute discretion, are at the necessary level to start the Initial Implementation (Release 1) Phase. Where one or more Deliverables in the Detailed Design (Release 1) Phase have not been Accepted by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.

6.3 Services

6.3.1 Subject to section 7.7, the Contractor must supply the following Services as part of the Initial implementation (Release 1) Phase:

#	Description
1.	Adaptation of the Licensed Software to reflect the Customer's Requirements for REM 2016.1 as specified in the Technical Documents.
2.	Document and define system interfaces as detailed in the Technical Documents
3.	Inclusion of four (4) additional Customer gap features that have been specified during the Detailed Design (Release 1) Phase into the Licensed Software. Refer to the document titled "DTBRS GAP Analysis Version 3.0" for a list of the relevant items identified with a planned delivery date of 30/04/2016.
4.	Preparation of off shore testing of the Licensed Software that shall include setup of in-factory test environment
5.	**On site Test Preparatory Activities** a) set up test of non Production Licensed Software; b) definition of interfaces and Software components for testing; c) analysis and generation of test data in relation to REM2016.R1 Licensed Software; and d) Set up test of interfaces according to Release 1 Integration Specification.
6.	**Data Profiling Support:** Support of data profiling activities performed by the Systems Integrator comprising 4

	workshops and preparation for the same.
7.	**Data Management Support (On-shore & Off-Shore):** Technical support of the Contractor's data management team
8.	**Master Data Import / Export (offsite) support** Support of the process of master data gathering, preparation and importing into the different REM system environments in the different project stages, including the following activities: a) master data input as defined in an XLS-template provided by the Contractor; b) clarification of data structure specified in the XLS template; c) dry-run of the provided Master data XLS template on the relevant development system; d) one time import of the XLS-template to database on the Customer's Environment (further imports based on database dumps performed by SIT & System test) (Note: SAT and UAT will be performed in the implementation phase of the Final Contract; Additional required support can be ordered by the Customer via Change Request
9.	**Project Management as detailed in Appendix B**
10.	**Solution Architecture Support as detailed in Appendix B**
11.	**System Engineering:** Support of the System Integrator's System Administrator and maintenance of pre-Implementation environments until handover to the Customer of the master data import / export (on-site).
12.	**Solution Consultancy Support as detailed in Appendix B**
13.	**Quality and Requirements Management as detailed in Appendix B**
14.	**System Administration Training:** Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of the REM IMS. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. The aim of the course is to provide attendees with training enable the attendees to: (a) identify components of the REM IMS and assign them to system structures; (b) explain the functionality and purpose of the individual components of REM IMS, including system interfaces; (c) interpret operational and technical messages of the REM IMS and analyse causes; (d) carry out maintenance working steps for administration of the REM IMS components according to the system administration manual; (e) carry out software update procedures for the REM IMS; (f) name, readout and interpret relevant log files of the REM IMS; (g) assess the technical and operational effects of these actions; and **(h)** fulfil 2nd level support requirements.

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15. **Application Administration Training:** The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of the incident management system for REM 2016.1.R1.

The aim of the course is to provide attendees with training enable the attendees to:

(a) explain the functionality of REM 2016.1.R1;
(b) explain the functionality of the REM IMS Data Management Client;
(c) explain the functional data structure of REM 2016.1.R1;
(d) maintain REM 2016.1.R1 configuration data;
(e) configure the responsibility model;
(f) configure the track network;
(g) configure workflows; and
(h) carry out user, role and group administration.

6.3.2 The Contractor must supply the Services which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6.4 Deliverables

6.4.2 The Contractor is responsible for the following Deliverables:

#	Deliverable	Description	Approver
1	REM System (Software Delivery Stage 2016.R1)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery 2016.R1. The software will not be implemented in to the SIT environment; it will only be made available "to be" implemented in to the SIT environment subject to the signing of the Final Contract. The Deliverable for the purpose of this phase is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.	The Customer (or its nominee)
2.	Licensed Software	Release of the Licensed Software incorporating the Requirements for REM 2016.1R1.	The Customer (or its nominee)
3	Test Documentation *	Provision of: a) Test Reports for System Tests provided by the Contractor; b) Test Objective Matrix for SAT; and c) Test cases (including Test Systems) SAT	The Customer (or its nominee)
4	Interface Documentation*	Documentation for REM 2016.1.R1 to: a) SIRI interface; b) Notification interface; and c) Shadow DB interface, all as further documented in the Release 1 Integration Specification.	The Customer (or its nominee)

5	Data Model documentation*	Documentation for the REM data model	The Customer (or its nominee)
6	Training Material *	Training material for System Administration and Application Administration Training (on USB Medium), comprising: a) Trainer PowerPoint slide pack; and b) Server manual.	The Customer (or its nominee)
7	User Manuals*	System Administration Manual (Operator View) comprising: d) User Manual for IMC; e) User Manual for DMC; and f) User Manual for Webportal.	The Customer (or its nominee)

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract that the Parties anticipate executing by 29 February 2016.

6.4.3 The Contractor is responsible for supporting the following Deliverables that belong to the Systems Integrator:

#	Deliverable	Description	Approver
1.	Updated Implementation Strategy	Contribute to the Updated Implementation Strategy document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
2.	Updated Project Management Plan	Contribute to the Updated Project Management Plan being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
3.	Updated Architecture Specification	Contribute to the Updated Architecture Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
4.	Updated Integration Functional Specification	Contribute to the Updated Integration Functional Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
5.	Updated Data Technical Analysis Outputs	Contribute to Updated Data Technical Analysis being developed by the System Integrator. Outputs must include: a. data requirement classifications (Master data, Migration Data, BI data);	The Customer (or its nominee)

		b. data dictionary (Source and target data systems); c. data migration requirements; and d. data quality rules definition (at data attribute levels).	
6.	Updated Data Management Plan	Contribute to the Updated Data Management Plan document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
7.	Technology Implementation Plan	Contribute to the Technology Implementation Plan document describing the plan for the roll out of the relevant components for Release 1 and providing a detailed plan and schedule of activities to deploy the solution into the Environment. It must address training and installation of the REM IMS into the Environment, cutover and roll back. The final version must be provided 10 weeks prior anticipated deployment date for Release 1.	The Customer (or its nominee)

6.4.4. The Contractor must supply the Deliverables which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7. Acceptance, Change Request and Assumptions

7.1 Acceptance

7.1.1 The Contractor must:

a) in collaboration with the Customer and Other Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Other Contractors (as required) to ensure that all Deliverables that are part of the Detailed Design (Release 1) and Initial Implementation (Release 1) Phase are fit for purpose and meet the agreed Acceptance Criteria.

7.1.2 Subject to section 7.1.10, the Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Implementation & Maintenance Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

7.1.3 Deliverables will be reviewed by the Customer (or the System Integrator acting as the Customer's nominee). Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with clause 5 of the Additional Conditions, the System Integrator will request the Customer's endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

7.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

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a) Milestone Acceptance Forms must be signed in writing by the Contractors Project Director and Customers Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customers delegate; notification by email of the endorsement is sufficient.

d) Contractors Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) the Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in clause 5.4 of the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

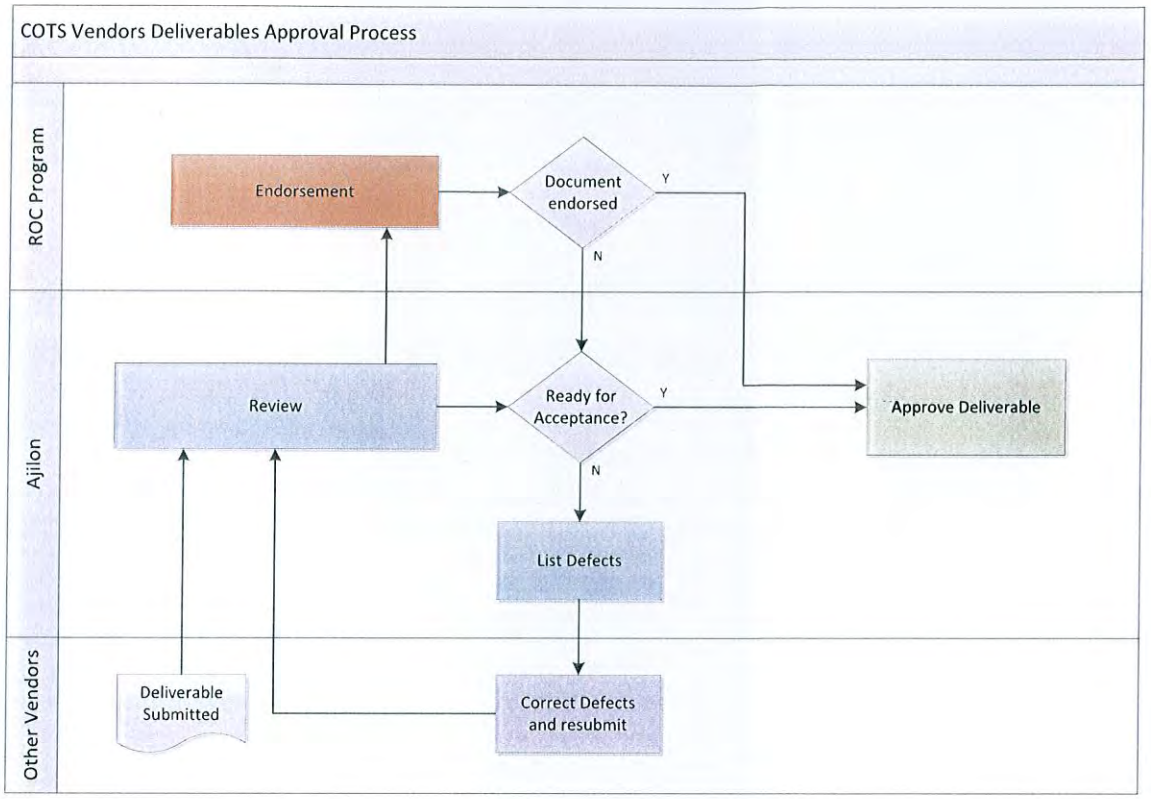
h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of defects (tracked in a spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



7.1.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7.1.6 The Contractor must ensure that the Solution, as it applies to REM IMS described in the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

7.1.7 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with clause 5 of the Additional Conditions.

7.1.8 The Detailed Design supplied by the Contractor under the Detailed Design (Release 1) Phase and the Deliverables supplied by the Contractor under the Initial Implementation (Release 1) Phase and endorsed/approved by the Customer/System Integrator (as applicable) will be the 'Solution' for the purposes of this PIPP.

7.1.9 For the purposes of the Customer Contract the 'Contract Specifications' for the Solution will be:

a) the Initial Requirements (as amended or updated in any documents supplied under the Detailed Design (Release 1) Phase and approved by the Customer);

b) the specifications, designs, any performance standards or other requirements for the Solution set out in any of the documents supplied by the Contractor in the Detailed Design (Release 1) Phase and approved by the Customer; and

c) any other the requirements relating to the Deliverables or the Solution as set out in this PIPP.

7.1.10 The Contractor agrees that any review, comment, approval, endorsement or election (including an election in respect of Detailed Design) or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect other Services or Deliverables under this Customer Contract, including in respect of the Detailed Design (Release 1) Phase;

b) does not limit or affect the provision of the Contractor's warranties or indemnities

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

7.2 Change Request

7.2.1 If:

a) during the Detailed Design (Release 1) Phase the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Initial Requirements (**Requirements Variation**); and

b) that Requirements Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

7.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 7.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits the Detailed Design,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Requirements Variation.

7.3 Not used

7.4 Summary Table of Deliverables and expected delivery dates

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Release 1) Phase and documented in the associated draft Project Schedule)

Detailed Design (Release 1) Phase

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 1	Updated High Level Solution Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 2	Release 1 Architecture Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 3	Release 1 Functional Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 4	Release 1 Non-Functional Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 5	Release 1 Integration Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 6	Project Communication Plan for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 7	Release 1 Data Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 8	Release 1 Data Technical Analysis Outputs	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 9	Updated Implementation Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

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Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 10	Release 1 Implementation Plan (draft)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 11	Technology Test Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 12	Updated Project Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 13	RACI	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 14	Agreed Final Contract	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 15	Detailed Implementation & Maintenance Phase PIPP	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 16	Updated Release 1 Product Gap Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 17	Release 1 System Test Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

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Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 18	Requirements Traceability Matrix for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 19	Technology Environment Management Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 20	Operating Model	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 21	Draft recommended ROC organisation structure	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 22	Change Impact Analysis (Release 1)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 23	Release 1 Training Needs Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 24	Licensed Software	*Software*	*30 April 2016*	*30 April 2016*
WBS 25	Test Documentation	*Document*	*31 May 2016*	*31 May 2016*

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Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 26	Interface Documentation	*Document*	*31 May 2016*	*31 May 2016*
WBS 27	Data model Documentation	*Document*	*31 May 2016*	*31 May 2016*
WBS 28	Training Material	*Document, PowerPoint Slides*	*31 May 2016*	*31 May 2016*
WBS 29	User Manuals	*Document*	*31 May 2016*	*31 May 2016*
WBS 30	Updated Implementation Strategy	*Document*	*31 May 2016*	*31 May 2016*
WBS 31	Updated Architecture Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 32	Updated Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 33	Updated Integration Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 34	Updated Release 1 Data Technical Analysis Outputs	*Document*	*31 May 2016*	*31 May 2016*
WBS35	Updated Data Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 36	Updated Project Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 37	Deployment & Implementation Plan	*Document*	*31 May 2016*	*31 May 2016*

7.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

7.6 Exclusions

Not applicable.

7.7 General Assumptions

7.7.1 **Product Capabilities - IMS-CAP-062.09**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.2 **Product Capabilities - IMS-CAP-002 / Non-functional requirements - NFR-SEC-004**-The governance over access to Sydney Trains "intranet" is under control of Sydney Trains.

7.7.3 **Product Capabilities - IMS-CAP-017.02**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.4 **Product Capabilities - IMS-CAP-039.01**-The display of a heat map for over crowding on platforms and a traffic light for visually tracking is provided as layer in the legacy GIS system.

7.7.5 **Non-functional requirements - NFR-AUD-007**-The accessibility of backend environment is controlled by Sydney Trains and/or the System Integrator.

7.7.6 **Non-functional requirements - NFR-AV-004**-Clustered hardware hosting virtual machines and the licenses for those virtual machines are provided as CSI.

7.7.7 **Non-functional requirements - NFR-IO-003**-A email server will be provided as CSI, an outgoing email address will be supported.

7.7.8 **Non-functional requirements - NFR-IO-004**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.9 **Non-functional requirements - NFR-IO-006**-The Operating Systems clock will be synchronized with standard IT synchronising mechanisms such as e.g. NTP Clock. The maintenance the support and the licenses for such SW is assumed to be provided CSI.

7.7.10 **Non-functional requirements - NFR_PER_NEW**-It is assumed that geographical diversity refers to situations where mobile users or clients lose connectivity with the system due to reception black sports or bandwidth shortage.

7.7.11 **Non-functional requirements - NFR-SEC-002**-It is assumed that the Active Directory environment is a customer supplied item.

7.7.12 **Non-functional requirements - NFR-SEC-010**-The Active Directory system will be provided and configured by Sydney Trains as CSI.

7.7.13 **Interfaces - IMS to BI**-The IMS database will be a Customer Furnished Item. The maintenance- and setup- task of such a shadow database will be part of the Sydney Trains internal IT department.

7.7.14 **Interfaces - IMS to Dashboard**-The assumption is that "Dashboard" refers to "OVDS" (Operational Video Display System).

7.7.15 **Interfaces - SMS**-It is assumed that the SMS provider is a customer furnished item.

7.7.16 **Interfaces – CTI IMS Options Paper - Comms**-It is assumed that the VCS system is a customer furnished item.

7.7.17 **Interfaces - Active Directory** -It is assumed that the Active Directory environment is a customer furnished item.

7.7.18 **Interfaces - Email** -It is assumed that the email system is a customer furnished item.

7.7.19 **Interfaces - Voice Mail**-Text to Speech Engine will be provided as Customer Furnished Item. Vocabulary and repository provided as Customer Furnished Item.

7.7.20 **Interfaces - GIS to IMS**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.21 **PM Plan - Project Timeline**-The assumptions are based on a presumed start of the project implementation in May 2015.

7.7.22 **IMS Options Paper - User Interface**-Regarding NIN: The governance of Sydney Trains "intranet" is under control of Sydney Trains.

7.7.23 **IMS Options Paper - User Interface**-NIN messages received by REM are considered valid, truthful and trustful and will be passed on towards the IMS incident operator as NIN-Notification without further

7.7.24 **IMS Options Paper - User Interface**-The availability of speakers, headphones or other acoustic devices, used to reply the configured acoustic signals in appropriate quality is outside the responsibility of Frequentis.

7.7.25 **IMS Options Paper - Comms**-It is assumed that the SMS provider is a customer Supplied item.

7.7.26 **IMS Options Paper - Comms**-Frequentis REM offers integration with VCS systems which support ECMS232 for Computer Telephony Interface. We assume that EMCS232 will be supported by the incumbent unified communications layer within the ROC. Any alternative solutions will require additional customisation of the product

7.7.27 **IMS Options Paper - Comms**-Text to Speech Engine will be provided as Customer Supplied Item.

7.7.28 **IMS Options Paper - Comms**-Vocabulary and repository provided as Customer Supplied Item.

7.7.29 **IMS Options Paper - Comms**-It is assumed that the VoiceMail provider is a customer Supplied item.

7.7.30 **Implementation Strategy Stage 1**-The site and system environment for deploying the demonstrator system has to be provided by Sydney Trains or the System Integrator.

7.7.31 **Implementation Strategy Stage 1**-It assumed that email communication shall be supported and that an email server will be provided as Customer Furnished Item.

7.7.32 **Implementation Strategy Stage 2**-The raw data containing the information for building the foundation for the system's productive configuration is available and structured.

7.7.33 **Implementation Strategy Stage 2**-SMEs familiar with the data layout, it's meaning and purpose are available and support the data import process

7.7.34 **Implementation Strategy Stage 2**-It is assumed that email communication shall be supported and that an SMS provider is available. Limitations of SMS provider capabilities need to be considered (e.g. two way communication).

7.7.35 **Implementation Strategy Stage 2**-The connection and availability of a SMS provider is regarded a Customer Furnished Item.

7.7.36 **Implementation Strategy Stage 3**-A DTTS system which provides an interface for the IMS systems available.

7.7.37 **Implementation Strategy Stage 3**-A CIMS system which provides an interface for the IMS systems available.

7.7.38 **Implementation Strategy Stage 3**-The integration will be performed outside the productive environment.

7.7.39 **Implementation Strategy Stage 3**-A test environment able to host all three systems: REM, DTTS and CIMS is available and accessible.

7.7.40 **Implementation Strategy Stage 3**-DTTS and CIMS are configured in a way to allow testing of feasible and realistic use cases.

7.7.41 **Implementation Strategy Stage 3**-In case of missing systems to be integrated (DTTS or CIMS), simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.42 **Implementation Strategy Stage 4**-All legacy systems for integration with the IMS are configured and available.

7.7.43 **Implementation Strategy Stage 4**-In case of missing systems to be integrated, simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.44 **Implementation Strategy Stage 4**-It assumed that CTI integration with the VCS shall be supported.

7.7.45 **Implementation Strategy Stage 4**-It is further assumed that the IMS will gain full access to a non productive VCS environment in order to test the integration.

7.7.46 **Implementation Strategy Stage 4**-It assumed that Voice Mail communication shall be supported and that a Voice Mail provider is available. Limitations of Voice Mail provider capabilities need to be considered (e.g. two way communication).

7.7.47 **Implementation Strategy Stage 4**-It is assumed that a speech engine for creation of Voice Mail messages is available.

7.7.48 **Implementation Strategy Stage 4**-The connection and availability of a Voice Mail provider and an appropriate speech engine is regarded a Customer Furnished Item.

7.7.49 **Licensing**-The capacity of the server installation is based on the following assumptions:

a) Up to 50 concurrent users of REM Incident Management Client;

b) Each operator is concurrently working on up to 5 incidents in parallel;

c) Up to 5 concurrent users of REM Data Management Client;

d) Up to 500 concurrent users accessing the REM Web Access Client;

e) Up to 50 concurrent users of REM Mobile Squad Leader App devices; and

f) Up to 80 concurrent users of REM Notification Sender App devices.

7.7.57 **Pricing**-License prices are based on the scoped amount. A discount has been applied given the number of licences specified. If this amount reduces, the discount will not apply.

7.7.58 **CSI**-All other CSI and responsibilities listed in the PIPP.

7.7.59 **Pricing** – Frequentis efforts have been calculated on the efforts agreed in the PIPP delivered in the High Level Solution Design Phase. If efforts are above and beyond the work originally scoped because of reasons including, but not limited to, contributions to new documents and/or other contractor's deliverables, a Contract Change Variation shall be raised.

7.7.60 **Pricing** – Transformational and Change Deliverables were not a part of the original Frequentis scope. The efforts and contribution to these activities needs to be analysed in conjunction with the System Integrator. The additional efforts will require a Contract Change Variation or additional payment arrangement.

7.7.61 **Scope** – The final definition of what feature is available in which release needs to be defined in the initial workshops.

7A. Implementation

7A.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the parties.

7A.2 Implementation strategy

7A.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

7A.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Deliverable No.9 in sections 5.4.

7B. Project Management

7B.1 Advice and knowledge transfer

Subject to the exclusions in section 7.6, the Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

7B.2 Contractor assistance

If requested, the Contractor must participate all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Initial Requirements, or if amended the Requirements, are accurate and complete; and

b) the Contractor's proposed solution.

7B.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

7B.4 Risk management

7B.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes Delivery Risks,

(**Issues Register**).

7B.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

7B.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 7B.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the Delivery Risks.

7B.4.4 The Contractor must report to the Customer:

a) Any issues or risks (including any Delivery Risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the Delivery Risks, immediately on becoming aware of that change in status.

7B.5 Cooperation with Other Contractors

7B.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Other Contractors in relation to the Project;

b) without assuming any liability for the contents of an Other Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Other Contractors;

c) comply with all other requests of the Other Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Other Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to an Other Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this clause by the Contractor is accurate and to the extent possible, complete.

7B.6 Communication with Other Contractors

7B.6.1 The Contractor must not, without the Customer's prior written consent:

a) give an Other Contractor a direction or instruction which will or is likely to vary the Other Contractor's scope in relation to the Project;

b) give an Other Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Other Contractor in relation to the Project;

c) give an Other Contractor a direction or instruction which will or is likely to delay the time that the Other Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Other Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Other Contractor in relation to the Services or the Deliverables.

7B.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and an Other Contractor, or between Other Contractors, in connection with the Project.

7B.7 Disputes between the Contractor and Other Contractors

7B.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with an Other Contractor by discussion and negotiation without the Customer's involvement.

7B.7.2 Where the Contractor has notified the Customer under section 7B.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

7B.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

7B.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

7B.8 Reliance on Other Contractors' work

The Customer does not warrant the accuracy or correctness of any unapproved reports, plans, drawings, documents or information provided by Other Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such unapproved reports, plans, drawings, documents or information.

7B.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

7B.10 Delivery Address

7B.10.1 The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

7B.10.2 The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

8. Customer Supplied Items (CSI) and Customer obligations

8.1 CSIs and obligations

8.1.1 Subject to section 8.2, the Contractor acknowledges that the Customer has provided the following CSI items to the Contractor prior to the Contract Date:

a) project scope (as documented in the architecture blueprint);

b) functional requirements (as provided in the RFP);

c) non-functional requirements (as provided in the RFP);

d) draft Implementation & Maintenance Phase PIPP

e) system security requirements;

f) data management strategy;

g) project concept and review;

h) architecture blueprint;

i) systems impacted (existing);

j) interface specifications (where available);

k) technical policies and standards;

l) draft Procure IT (the Customer Contract and this PIPP);

m) ROC organisation structure;

n) ROC program high level roadmap;

o) draft ROC program test management framework;

p) current processes;

q) concept of operations;

r) Transformation and Change Requirements v4.1;

s) ROC Systems Assurance and Planning Framework documents; and

t) ROC Data Architecture High-Level Strategy.

8.1.2 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

8.1.3 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 8.1.1(a) – (t), 8.1.2(a) and 8.2.1.

8.2 CSI Facilities and Equipment

8.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data;

c) all system environments as defined in the document titled "Technical Environment Management Strategy version 9.0";

d) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required and validated data has to be provided in the format required by the Contractor; and

e) desktop equipment for the agreed number of Contractor Personnel working on Site,

8.3 CSI verification

8.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

8.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

8.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

9. Personnel

9.1.1 The Contractor must ensure that each member of the Contractor's Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

9.1.2 Any of the Contractor's Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

9.1.3 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

9.1.4 Nothing in Appendix B affects the scope of the obligations of either party as described in sections 4 and 5 of this PIPP.

10. Subcontractors

10.1 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the Detailed Design Phase workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

11. Approval by the Customer

11.1 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with clause 5 of the Additional Conditions and as per section 5.4 above.

11.2 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

12. Payment Plan

12.1 Contract Price

12.1.1 The Contract Price for the Contractor to complete Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase of the ROC program is [redacted] (ex GST).

12.1.2 The Contract Price has been calculated based on the milestones specified in the table below. A breakdown of the Contract Price is as follows:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation Phase and the Detailed Design (Release 1) Phase:			
The Services and Deliverables specified in sections 4 and 5 of this PIPP.	[redacted]	1	[redacted]
Sub-Total Project Preparation Phase and the Detailed Design (Release 1) Phase			[redacted]
Initial Implementation (Release 1) Phase:			
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase (Release 1) Phase until the end of	[redacted]	1	[redacted]

November.			
Travel Costs	[redacted]	1	[redacted]
Customisation for ROC a) The majority of the customisation efforts can be deferred until 30 November 2015. b) Assumes that remaining customisation efforts will be ordered through the implementation contract until the deferred date.	[redacted]	1	[redacted]
License component The REM IMS.	[redacted]	1	[redacted]
Sub-Total Initial Implementation (Release 1) Phase			[redacted]
Initial Implementation Phase (CR1)			
Customisation for ROC Interface customisation including GAP Features	[redacted]		[redacted]
On/Off-Site Personnel Effort 1 December 2015 to 29 February 2016	[redacted]		[redacted]
Travel Budget	[redacted]		[redacted]
Sub-Total Initial Implementation Phase (Continued)	[redacted]		[redacted]

12.1.3 The Contractor is to be paid in accordance with the following milestones

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price

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	Detailed Design Deliverables funded as follows:			
	Project Preparation Phase and Detailed Design (Release 1) Phase			
1	Mobilisation payment of 50% (of [redacted] of the Project Preparation Phase and Detailed Design Phase on or about the Effective Date	[redacted]	1	[redacted]
2	25% (of [redacted]) on 15th September 2015	[redacted]	1	[redacted]
3	25% (of [redacted]) on 15th October 2015	[redacted]	1	[redacted]
	Initial Implementation Phase			
4	Mobilisation payment of 50% (of [redacted]) of the Initial Implementation Phase on execution of the Customer Contract.	[redacted]	1	[redacted]
5	25% (of [redacted]) on 31 January 2016	[redacted]	1	[redacted]
6	25% (of [redacted] on delivery of Software specified in section 6.4 of this PIPP	[redacted]	1	[redacted]
	Initial Implementation Phase (CR1)			
7	Initial Payment due upon Customer execution of CR1	[redacted]	1	[redacted]
8	Progress Payment	[redacted]	1	[redacted]

	due on 31/01/2016			
9	Progress Payment of due on 29/02/2016	[redacted]	1	[redacted]
10	Final Payment due upon delivery of the REM2016.R1 *	[redacted]	1	[redacted]
			Sub-Total:	[redacted]
			Any Other Charges:	
			GST:	[redacted]
			Total Amount:	[redacted]

* The Deliverable for the purpose of this payment is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

12.2 Payment

12.2.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 12.1.3.

12.2.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

12.2.3 The Contractor acknowledges and agrees that, as at the Commencement Date, the Customer has paid the Milestone 1 payment - Mobilisation payment of 50% (of [redacted]) of the Project Preparation Phase and Detailed Design (Release 1) Phase.

12.2.4 In the event that the Final Contract is not executed by 29 February 2016 as a result of any delay to the execution of the Final Contract solely attributable to the Customer, the Parties will negotiate, in good faith, stand-down and re-mobilisation costs.

12.2.5 In the event that the Customer does not enter into the Final Contract or terminates the Customer Contract for convenience, the Parties will negotiate, in good faith, the value of the balance of the cost of the Licensed Software which will be payable to the Contractor.

12.2.6 For the purposes of the Customer Contract, the Contract Price specified in section 12.1.3 is the Contract Value.

12.3 Termination for convenience

12.3.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with clause 15 of the Additional Conditions.

12.4 Liquidated Damages

12.4.1 Liquidated Damages will not be applicable for the Detailed Design (Release 1) Phase or Initial Implementation (Release 1) Phase.

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13. Governance

13.1 Authorised Representatives

13.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Mark Pigot; and

b) the Contractor's Authorised Representative is Martin Rampl.

13.2 Management committee

13.3.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Mark Pigot;

b) Stefano Bianchini;

c) Bob Allum;

d) Imola Novak;

e) Martin Rampl;

f) Christian Dorner; and

g) Julian Molzer.

13.3.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

13.3 Management committee function

13.3.1 The function that the management committee is to:

h) review and monitor progress under the Customer Contract; and

i) carry out any other functions stated in Item 16 of the General Order Form.

13.4 Management committee meetings

The management committee must meet no less than once a week during the Project at the times and locations specified by the Customer.

13.5 Management committee progress report

13.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 13.4, provide the Customer with a weekly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

i. minutes and actions from the last meeting;

ii. risks and issues;

iii. details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

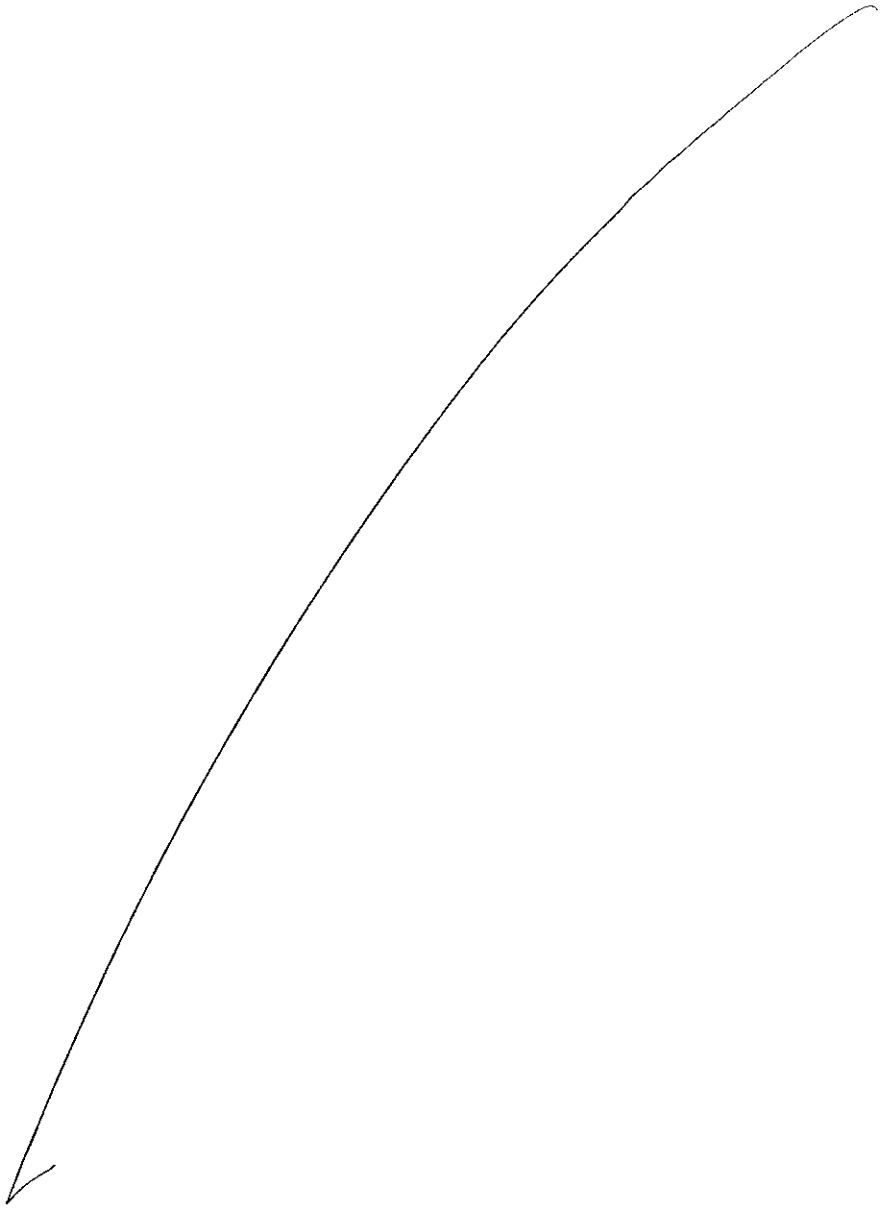
e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

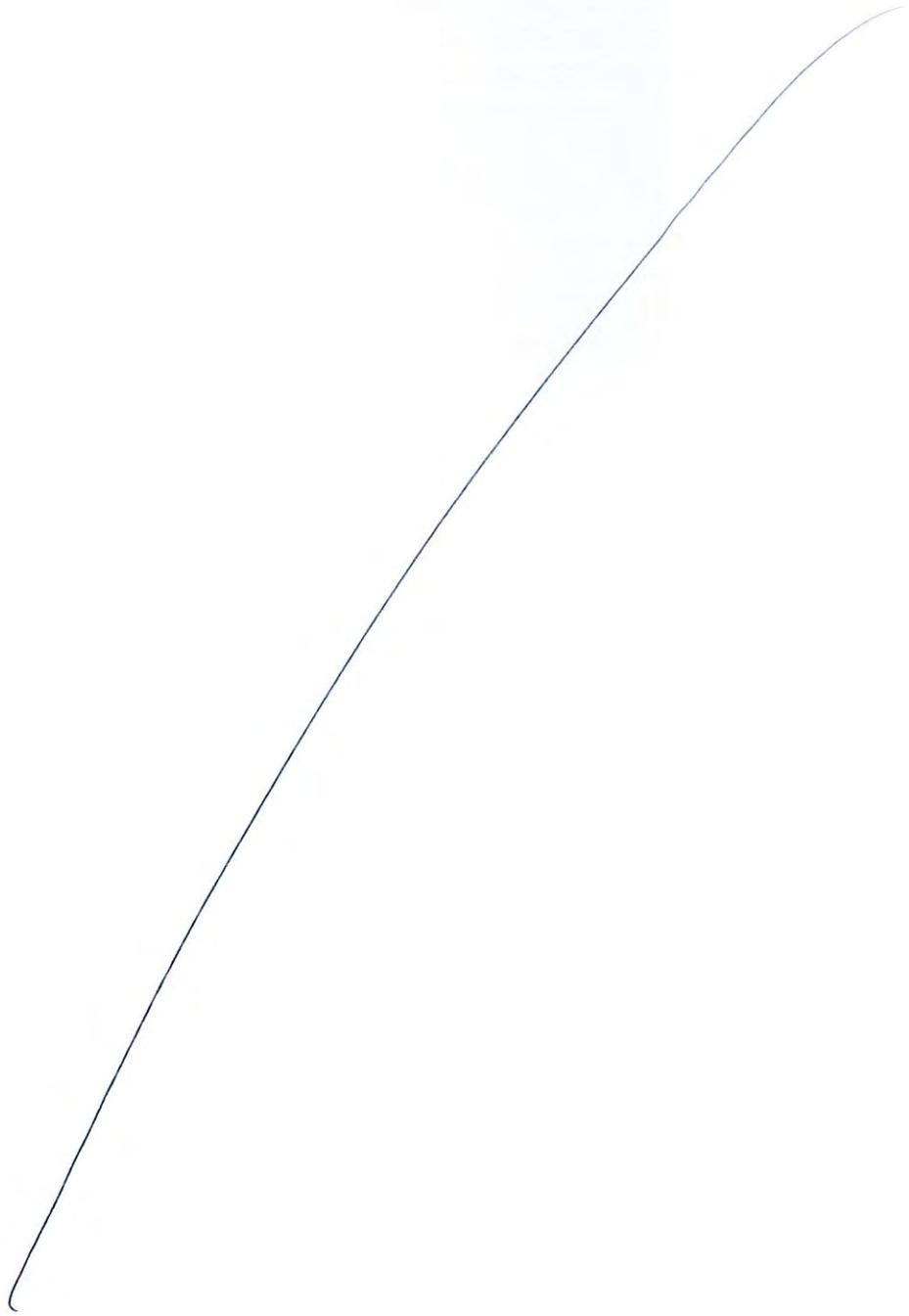
g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Initial Requirements and Updated Requirements

Part 1: Initial Requirements



Part 2: Updated Requirements



Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Julian Molzer	Project Manager	a) Overall successful performance of the project within schedule and budget; b) Overall project management activities (planning, organising, controlling); c) Participation and action item processing for Project Management related topics with the Customer and System Integrator; d) Production of Weekly Status Reports, including the Project Highlight Reports; e) Attending Management Committee Meetings; f) Managing the Contractor team on-site/off-site; g) Managing Change Requests; h) Risk management – DRICA; i) Facilitating cooperation with the Other Contractors; j) Management and execution of all Project related communication between the System Integrator, CNS and the Contractor (including alignment meetings and technical clarification)
Bjoern Brunner	Solution Architect	a) Participation and action item processing in workshops with the Customer and System Integrator; b) Solution design; c) Architectural consultancy; d) Master Data mapping support; e) Support of integration and integration validation.
Armin Steinwandter & Peter Hauk	Solution Consultant	a) Solution Consultance Support (Solution Consultant) ; b) Participation and action item processing in workshops with the Customer and System Integrator; c) Product & Solution consultancy; d) Data provisioning support; e) Data management and configuration support

Bjoern Brunner	Requirements. & Test Manager	a) Co-ordination of all requirements, engineering and test activities for the Project; b) Preparation of all Acceptance Test activities.
Maria Schwarzenauer	Project Manager CNS	c) CNS project management activities (including planning, organising and controlling) d) Management and execution of all Project related communication within CNS (including technical alignment meetings and technical clarification)
Robert Devide	Requirements Manager off-site	Requirements engineering for REM2016.1.R1development off-site
Monika Blassnig	Quality Manager	Quality assurance of the Project Deliverables as well as ensuring that the Configuration Management guidelines are known and met by the Project team.
Bruce Evans	System Engineer	a) Support of System Integrator's system administration activities for Demo, Dev, SAT, SIT, UAT, Training environments until handover to the Customer; b) Master Data Import / Export (on-site).
Monika Bassnig	Configuration Manager	Identification, direction and co-ordination of the Configuration Management activities.
Alexander Bruckner	Product SW Lead	Software configuration and development in response to the requirement specifications
Bruce Evans	Test Engineer	Support Test Manager (creating, performing test cases, test documentation)
Daniel Turner	System Engineer	System Installation / Integration
Alistair McGill	Account Manager	Responsible for customer relationship management
Martin Rampl	Commercial Manager	In charge of negotiating the contract and all modifications thereto on the part of the contractor
Swdorny Veliyath	Technical Trainer	Preparation and provision of system administrator and application administrator training.

Thomas Karl	Internal Project Sponsor Frequentis	Accountable for the overall Project success towards the Contractor's executive board and participant of the ROC steering committee.
Reinhard Sollböck	Internal Project Sponsor CNS	Accountable for the success of the CNS project share towards the Contractor's executive board.

2 Customer roles and responsibilities

Name	Role	Responsibility
Mark Pigot	Technology Team Manager	Management of the Technology Team
Stefano Bianchini	Lead Architect	Oversight of Technical Design for ROC Program
Bob Allum	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Imola Novak	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
As required	Sydney Trains Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

Phases to deliverables	Baseline End Date
1. Updated High Level Solution Design (HLSD)	16th October 2015
2. IMS Architecture Specification	27th October 2015
3. IMS Functional Specification	27th October 2015
4. IMS Non-Functional Design	27th October 2015
5. IMS Integration Specification	27th October 2015
6. Project Communication Plan for IMS Release	4th September 2015
7. IMS Data Management Plan	11th September 2015
8. IMS Data Technical Analysis Outputs	27th October 2015
9. Updated Implementation Strategy	22nd September 2015
10. Implementation Plan	1st October 2015
11. Technology Test Strategy	11th September 2015
12. Updated Project Management Plan	14th September 2015
13. RACI	28th August 2015
14. Frequentis Agreed implementation and Support Contract	25th September 2015
15. Frequentis Detailed implementation & Maintenance Support Contract (PIPP)	24th September 2015
16. Updated IMS Product Gap Analysis (HLTBR)	28th October 2015
17. Updated IMS Product Gap Analysis(DBR)	28th October 2015
18. IMS System Test Plan	15th October 2015
19. Requirement's Traceability Matrix for IMS Release 1	15th October 2015
20. Technology Environment Management Strategy	18th September 2015
21. Operating Model	29th September 2015
22. Draft recommended ROC Organisational Structure	30th September 2015
23. Change Impact Analysis (Release 1)	9th October 2015
24. IMS Training Needs Analysis	23rd October 2015

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25. REM 2016 R1 Licensed Software	30 April 2016
26. Test Summary Report	31 May 2016
27. Test Documentation	31 May 2016
28. Interface Documentation	31 May 2016
29. Data Model Documentation	31 May 2016
30. Training Material	31 May 2016
31. User Manuals	31 May 2016
32. Updated Implementation Strategy	31 May 2016
33. Updated Architecture Specification	31 May 2016
34. Updated Functional Specification	31 May 2016
35. Updated Integration Functional Specification	31 May 2016
36. Updated Release 1 Data Technical Analysis Outputs	31 May 2016
37. Updated Data Management Plan	31 May 2016
38. Updated Project Management Plan	31 May 2016
39. Deployment & Implementation Plan	31 May 2016

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

The overall risk management process to be applied can be summarised in the figure below.

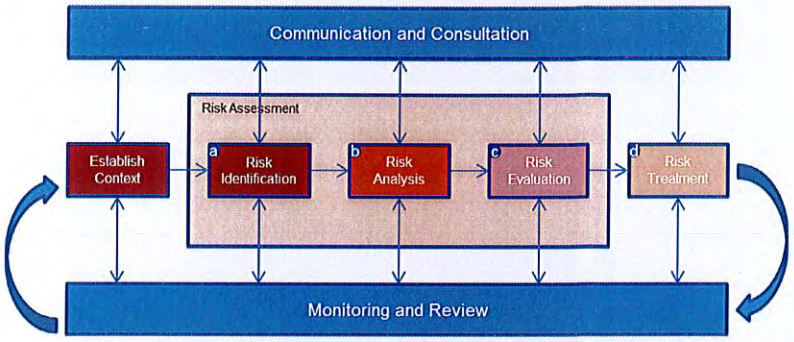

Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

AJILON MILESTONE ACCEPTANCE

CLIENT NAME :	**Sydney Trains**
CONTRACT :	
PROJECT :	

Milestone Details

The following Milestones have been met under the above project:

Milestone/ Deliverable	Evidence	Date Provided/Met

The above Milestones/ Deliverables have been provided/ met :

Signature _____

Project Director _____

Date _____

On Behalf Of Ajilon Consulting Pty Ltd

Signature _____

Program Manager _____

Date _____

On Behalf Of Sydney Trains

[Ajilon Commercial use]		
Description	**Amount**	**Comments/Reference**
Client Purchase Order Value	$	
Value of Previous Claims	$	
Value of this Claim	$	Payable to Ajilon
Total Value this Claim	**$**	Payable by Sydney Trains
Balance Outstanding	$	

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The "doer" creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one "A" can be assigned to an action. Also known as the "Owner" of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. "In the Loop"
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. "Keep in the Picture"

Phase	Document Name	Contractor	System Integrator	Customer
Detailed Design (System Integrator and Contractor) Release 1				
	Updated High Level Solution Design	R	A,R	C
	Release 1 Architecture Specification	R	A	C
	Release 1 Functional Specification	R	AR	C
	Release 1 Non-Functional Design	R	AR	C
	Release 1 Integration Specification	R	A,R	C
	Project Communication Plan for Release 1	C	A,R	C
	Operating Model	R	A	C
	Change Impact Analysis (Release	R	A,R	C

Phase	Document Name	Contractor	System Integrator	Customer
	1)			
	Release 1 Training Needs Analysis	R	A,R	C
	Drafting a recommended ROC Organisational Structure	R	A,R	R
	Release 1 Product Gap Analysis	R	A	I
	Release 1 Data Management Plan	R	A	C
	Release 1 Data Technical Analysis Outputs	R	A	R
	Updated Implementation Strategy	R	A	C
	Release 1 Implementation Plan (Draft)	R	A	C
	Technology Test Strategy	R	A	C
	Updated Project Management Plan	R	A,R	C
	RACI	C	A,R	C
	Agreed Final Contract	I	A	R
	Detailed Implementation & Maintenance Phase PIPP	I	A	R
	Release 1 System Test Plan	A	R	C
	Requirements Traceability Matrix updated for Release 1	R	A,R	C
	Technology Environment Management Strategy	R	A,R	C
Initial Implementation (Release 1) Phase (Contractor & Other Contractor)				
	REM 2016.1 R1 Software	C	A	C
	Test Documentation for ST and SAT	C	A,R	C
	Interface documentation for REM to SIRI SX, REM to Notifications and REM to Shadow DB Mapping	C	R	C
	REM Data model documentation	C	A,R	C

Phase	Document Name	Contractor	System Integrator	Customer
	Training material for System Administrator and Application Administrator Training	C	A,R	C
	User manuals: System Administration Manual (Operator View) User Manual for IMC User Manual for DMC User Manual for Webportal	C	A,R	C
	Updated Implementation Strategy	A,R	R	C
	Updated Architecture Specification	A,R	R	C
	Updated Functional Specification	A,R	R	C
	Updated Integration Specification	A,R	R	C
	Updated Project Communication Plan	A,R	R	C
	Updated Release 1 Data Technical Analysis Outputs	A,R	R	C
	Updated Data Management Plan	A,R	R	C
	Updated Project Management Plan	A,R	R	C
	Technology Implementation Plan	A,R	R	C

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Appendix G – Acceptance Criteria

Approval Criteria for Project Preparation Phase

The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

Approval Criteria for Detailed Design (Release 1) Phase

Standard List of Approval Criteria

The Approval Criteria for the following Deliverables of Detailed Design (Release 1) Phase are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase;

b) where the Deliverable is a document, that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (section 5.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design (Release 1) Phase, following the completion of the initial Customer/ Contractor workshops.

Approval Criteria for the Initial Implementation (Release 1) Phase

The Approval Criteria for the following Deliverables of Initial Implementation (Release 1) Phase are as follows:

a) where the Deliverable is a document, that all sections of the document are complete;

b) the Deliverable meets the criteria listed in the Deliverables section (section 6.4 of the PIPP), where stated;

c) if applicable to a document, the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

d) there are no outstanding major defects from the review of the deliverable; and

e) where the Deliverable is REM 2016.R1, receipt by the Customer of REM 2016.R1 on physical media shall occur at delivery of the executable software on physical media to the Customer. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

Appendix A – Initial Requirements and Updated Requirements

Part 1: Initial Requirements

Part 2: Updated Requirements

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
Detect				
IMS-CAP-001	The ability to integrate with various alarm sources, systems and technology to receive automated alerts. The type of automated alerts is to include but not be confined to: • Service delays received from DTTS, • Signal passed at danger, • Condition Monitoring, • Signal failure, • Points failure, • Overhead wiring failure, • Social media feeds, • Dwell time, • Section running time Lost, • Control system failure, • Technology failure, • Electrical failures / SCADA Network, • CCTV, • Alerts received from other incident management systems. Note: Please refer to NFR for details on interfacing standards and technologies.	E	Configuration	The product has a generic interface for creating incidents based on alerts raised from various upstream systems (e.g. asset monitoring, camera feed, incoming emergency calls, other incident management or condition monitoring systems). Incoming alerts are aggregated in a separate alert monitor view which allows users to create incidents or dismiss alerts.
IMS-CAP-002	The ability to create a network incident notice. Details to be captured for example are: • Issuers name, • Designation, • Contact details, • Relevant factual information, • Asset Information, • Weather (Forecast, actual, variance , actions).	E	Out of The Box	The product allows the generation of predefined reports and can export defined incident information to downstream systems as specified in IMS-CAP-044, IMS-CAP-045, IMS-CAP-046, IMS-CAP-047.
IMS-CAP-003	The ability to receive and input manual alerts. For example: • Phone call, • Text, • Email, • Web, • Mobile application. Phone calls are to be: • Recorded and entered into IMS, • Directed to the appropriate staff member. Note: All manually captured information is to be captured as structured data, this may involve prompts and human interaction.	E	Configuration	Users can create new incident records based on manual alerts received. Manually captured information can be filled out in the corresponding data fields, while unstructured data can be correlated to incidents as file attachments. REM supports integration with voice recording systems.
Record and Assess				
IMS-CAP-004	The ability to receive Network Incident Notices. For example: A network Incident Notice must be issued as soon as possible when an incident occurs on the rail network, and involves: • Actual or potential loss of life or injury, • Actual or potential damage to or defect in network infrastructure, • Damage to or defect in rail traffic, • Breach of Network Rules or Network Procedures.	E	Configuration	Network Incident Notices are treated and processed similarly to incoming alerts in the alert monitor view as specified in IMS-CAP-001, allowing the user to create an incident record based on the Network Incident Notice.
IMS-CAP-005	The ability for users to search and filter alarms. For example filter by: • Type of alarm, • Location of alarm, • Time and date of alarm.	E	Configuration	The alert monitor view allows users to filter alerts by type/source, location, time/date.
IMS-CAP-006	The ability to supress automatically created alarms. For example suppress automatically generated alarms, including but not limited to: • all persons/departments (e.g. false alarms), • by individual alarm instance, alarm type and/or department, • during shunting operations, • during manual proceed authorities (non-signalled movements).	E	Customisation	The suppression of alarms from alarm source types, e.g. CCTV, or specific sources e.g. a concrete CCTV camera can be configured. The suppression can be configured for a limited time interval. The display of alarms coming from certain alarm source types can be suppressed by the administrator for all users / roles.
IMS-CAP-007	The ability to manually create and update incident records. For example incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	E	Out of The Box	The creation and management of incident records is one of the product's key capabilities. Incident records can follow a predefined template, or follow a configurable workflow consisting of configurable checklists and functional modules.
IMS-CAP-008	The ability to automatically create and update incident records based on predefined business rules. Incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	E	Out of The Box	A newly raised incident is automatically provided with a unique identifier. A title can be suggested based on the incident category, location, Incident ID or other criteria. See IMS-CAP-007 for predefined and custom incident templates.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-009	The ability to automatically record incident details. The details and business rules required to automate the capture of incident details need to be configurable. For example details captured may include: • Users name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (Location of train, geographic location etc.), • Reporting system, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers), • Reference data, • Weather, • Events near by. Note: The details required will change based on the type of incident being recorded. It is envisaged that automatically created incident records will require some level of manual input to capture data elements which are not provided by other integrated systems.	E	Configuration	Incident details can be automatically filled or updated based on business rules, e.g. incident type, location and priority based on the alert source; weather data from an external service, affected services based on the incident location and impact etc.
IMS-CAP-010	The ability to manually record incident details. For example user may be prompted as to details required based on: • Users role (by either selecting from list or manually typing), • Type off Incident. Incident details may include: • Users Name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (can be location of train, geographic location etc.), • Reporter, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers) • Reference data • Weather, • Events near by. Note: The details required will change based on the type of incident.	E	Out of The Box	Incident details can be captured manually. The specific details are configurable for different incident templates. The product allows the recording of incident details as combo boxes or dropdown lists, radio buttons or checkboxes and text boxes.
IMS-CAP-011	The ability to correlate multiple incident records into a single incident record. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	E	Customisation	Out of the box: The product allows the creation of a master incident record for aggregating separate incidents that are tied to or caused by the same event. Duplicate incident records can be cancelled without loss of lawful recording information. Customising: Rules for merging of incidents have to be elaborated together with the customer.
IMS-CAP-012	The ability to prompt users in the correlation incident records based on predefined business rules. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	E	Customisation	It is possible to identify incidents that are potentially tied to or caused by the same event based on predefined business rules, such as correlating incident location and category for incidents within a certain configurable time frame.
-CAP-013	The ability to receive a list of affected train services in real time from an external system and associate these with an incident. For example: • Receive a list of affected services associated with a single incident, • Impact the incident had on each service, • The number of passengers travelling on each service, • The time in which the service returned to planned stopping times.	E	Configuration	The affected train services can be acquired from the DTTS in real time and can be referenced to the IMS incident. REM out of the box contains an interface to Thales Aramis-D.
IMS-CAP-014	The ability to easily indicate the impact an incident is having on services either manually and / or automatically. For example users may be prompted / supported by the system to capture impact details. Impacts could be to: • Specific runs, • Runs on a line, • Runs passing through a stations, • Cross modal transport, • Stations. Types of impact will include: • Delays, • Cancellations, • Altered stopping patterns, • Change route, • Alternative transport.	E	Configuration	The impact of an incident on services can be determined in conjunction with interface data from the DTTS. Out of the box, REM contains an interface to Thales Aramis-D.

Identifier	Functional Requirement	Criticality E = Essa	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-015	The ability to retrieve asset information from an external system in real time. For example: • Sets, • Stations, • Lines, • Overhead wiring, • Signals, • Points, • Assets maintenance schedules (Over due, next planned etc.).	E	Customisation	Asset information can be retrieved from an external ERP solution (Ellipse, SAP).
IMS-CAP-016	The ability to view the availability of incident response personnel. For example: • View availability of staff already in operation, • View the availability of standby crew or response personnel, • View the capabilities of crew (i.e. trained to operate which set types), • View contact details, • View current location of staff in operation. Note: Requirement linked to IMS-CAP-026	E	Customisation	The product provides a checklist view which allows the assignment of action items to selected personnel. The user is prompted with a selection of incident response personnel, along with contact details, each flagged as available or unavailable. The crew capabilities can be stored as (an) additional attribute(-s) or linked documents. The response team has to acknowledge or deny the task assignment and report the completion of the task. The current location of response teams can be determined by devices allowing GPS tracking. Those devices are not part of the product. Using GPS tracking devices to localize personnel may lead to legal issues.
IMS-CAP-028	The ability to assign / action response team / personnel. For example: Provide assignee with visibility of: • Competence, • Availability of response teams, Provide response teams with: • Notification of action including all details required (fault type, location etc.), • Ability to accept / reject action, • Provide checklist of actions to address.	E	Customisation	The assignment of action items to response teams is described in the requirement IMS-CAP-016. Response teams can be provided with incident information and checklists containing action items using the product's Mobile Client. The Mobile Client allows the user to accept or reject actions. Furthermore, incident information can be distributed using the product's outbound communication channels as specified in IMS-CAP-025
IMS-CAP-017	The ability to identify the location of an incident on a geospatial view. For example: • Incidents location in relation to rail network assets, • Location based on the geospatial coordinates of the incident, • Street view, • Aerial view, • Terrains view, • Mark up map with location / notes, • Ability to geo reference, • Identify site / incident access points etc.	E	Out of The Box	The location of an incident can be identified and displayed in the integrated GIS View. Additional layers containing rail specific information (e.g. assets, access points, railway tracks and stations,..) or general information (street and terrain view) can be displayed in the GIS View. The integrated GIS view allows the user to automatically focus on the entered incident location.
IMS-CAP-018	The ability to manually add an estimated recovery time to an incident record. For example: • Estimated recovery times, • Estimated response times. Note: This estimate may be based on historic data or user knowledge.	E	Out of The Box	It is possible to set estimated response and recovery times for incident records.
IMS-CAP-019	The ability to automatically add an estimated recovery time to an incident based on configurable business rules. For example: • Estimated recovery times, • Estimated response times. Note: It is envisaged these automated estimations will be applied based on historic data.	E	Customisation	The product allows a basic configuration of business rules based on a defined number of incident details (e.g. type, weather condition) that automatically add an estimated response and recovery time for incident records.
Select / Define and Activate Response Plan				
IMS-CAP-021	The ability to initiate a workflow in response to creating an incident record. For example: • Initiate relevant workflow / response plans.	E	Out of The Box	The product allows the initiation of workflows based on defined business rules. For example, alerting of internal and external response teams, assigning tasks to response teams or an automated information of affected Rail Undertakings.
IMS-CAP-022	The ability to initiate manual predefined response plans. For example: • Provide plans to support Train Controllers or incident personnel in decision making. • Initiate alternate transport plans.	E	Out of The Box	Predefined response plans can be initiated as workflow-based checklists that allow the distribution of information to the involved parties.
IMS-CAP-023	The ability to create and initiate ad-hoc response plans. For example: • Create plans to respond effectively to rare / unusual incidents.	E	Out of The Box	Custom action items can be added to the checklist during the resolution of the incident. Each action item has a fixed set of attributes (Title, Description, Assignee, Timestamp/Range, Priority). Additionally, REM supports merging response plans for different types of incidents to cover rare and unusual incidents.

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-025	The ability to provide notification services to selected personnel For example: • Push based notifications, • Pull based notifications, • Subscription based notifications, • Push media update. Manage notification distribution lists and groups and business rules: • Create, • Read, • Update, • Delete, • Notifications to be distributes in near real time. Note: Notification may include notifying crew / operational staff of CAN warnings (Condition Affecting Network (i.e. Temporary Speed Restrictions) Notifications will also be distributed to management/ executives and other 3rd parties.	E	Out of The Box	Outgoing notifications can be manually or automatically sent to various channels, i.e. Short Message Service, email, Voicemail or as push/pull based notification. REM includes a configurable rule engine that determines who has to be informed about which incidents, and using which communication channel. Notification distribution lists can be configured.
IMS-CAP-026	The ability to track and display the location of all response teams / personnel: For example: • Location indicated on a map / geospatial display, • Roster information, i.e. the availability of team / personnel, • Current list of assigned actions assigned. Note: Requirement linked to IMS-CAP-016	E	Out of The Box	The integrated GIS View, automatically focusses on the incident location and displays the location of response teams associated data (assigned actions, roster information) in a dedicated layer.
IMS-CAP-027	The ability to view a current list of consumables that a teams / personnel are in possession of. For example: • Consumables required to fix / address a fault, • Tools required to fix / address a fault, • Vehicle type (specific vehicle type may be required to access a fault), • Historical analysis.	E	Customisation	The product is capable of displaying specific information (e.g. consumables, tools,...) about incident teams, retrieved from an external source system.
IMS-CAP-029	The ability for mobile personnel capture incident details when responding to a incident. For example: • Response teams capture and provide more details (via forms and checklists), • Reponses teams are able to view the latest details / information captured by other staff members.	E	Out of The Box	Response teams can be provided with a mobile client of the product that allows the capturing of incident details.
IMS-CAP-030	The ability to create predefined workflow / check lists for different types of incidents. For example different types of incident groupings will include: • Equipment, • Miscellaneous, • People, • Trains, • Weather Conditions. Note: Different types of incident will require involvement from different personnel and 3rd parties. Ability to: • Create, • Read, • Update, • Delete.	E	Out of The Box	Incident categories, workflows and checklists are configurable. Access rights for checklist items can be configured.
-CAP-031	The ability to assign an incident actions manually and / or automatically. For example: Assign incident actions to a: • Business group / division, • Individual staff member. Assigning Incident records / actions to be: • Manual and / or, • Automated based on predefined criteria / metadata. Note: It is envisaged that workflow will have predefined actions and potential business groups / divisions responsible for them however this requirements allows for additional actions to be assigned.	E	Customisation	The product allows a rule based or manual assignment of incident actions to selected personnel. Incidents can be assigned to users or roles (corresponding to divisions). A filter functionality allows users to see incidents assigned to them.
IMS-CAP-032	The ability to manually override / skip workflows and checklists. For example authorised user able to depart: • Predefined Workflow, • Predefined Activity, • Predefine Checklist.	E	Out of The Box	The product allows workflows, activities and checklists to be skipped or processed in an arbitrary order unless mandatory for the completion of the workflow.
IMS-CAP-033	The ability to manually re-assign a workflow activity to a different individual or role. For example: • Initial assigned user unable to action task.	E	Out of The Box	The responsibility for the workflow activity can be changed to a different individual or role.

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-034	The ability to distribute response plans to selected personnel electronically. For example via: • Web based application • Mobile application. **Note:** It is envisaged that distribution business rules would be managed as part of workflow.	E	Out of The Box	Response plans can be distributed to selected personnel by various communication channels or a web/mobile client.
IMS-CAP-035	The ability to provide a collaborative working environment in which multiple user will have the ability to simultaneously access and update incident details in real-time. For Example internal and external users provided with: • Visibility of incidents via multiple mechanisms: • Video, • Conferencing (calling and video), • Web, • Application based, • Notification, • Phone, • Mobile App, • Ability to provide input / suggestions. These would be managed through role based permissions. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan • Red indicates that required actions for the incident are not tracking to the response plan.	E	Out of The Box	The product allows multiple users to simultaneously access and update incident details. Incident information can be made available in the web and mobile client or distributed as outlined in IMS-CAP-025 (Short Message Service, email, Voicemail or as push/pull based notification). An incident overview allows users to track the progress of multiple incidents, allowing a graphical representation as traffic lights.
Track and Escalate				
IMS-CAP-038	The ability to record action(s) within an incident record. For example record action information such as: • Calling emergency services, • Calling operational staff, • Timestamps. The status of an action is monitored on its own and as part of the overall workflow, including but not limited to: • Overall status, • Time-forecast to complete, • Action completed, • Action authorisation (whom, when etc. where applicable), • Incidents and actions are tracked until completion, • Critical issues, • Constraints & Dependencies.	E	Out of The Box	Every single action for incident handling is logged and flagged with an automatic system timestamp, which cannot be overwritten. Additionally, the user can manually set a timestamp for specific events during incident handling (which is tracked separately). Otherwise, the timestamp is automatically filled with the current time. The tracked information allows the monitoring of the incident's status, action authorisation and completion as well as derived issues, constraints and dependencies.
IMS-CAP-039	The ability to provide visualisation capabilities to easily assess an incident and the status of its progress. For example: • On a rail schematic map, • On a geospatial map, • Affected service(s), • Related assets/equipment e.g. gates and assets, • Likely impact. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan, • Red indicates that required actions for the incident are not tracking to the response plan, • The ability to display a heat map to visualize or alert over crowding on platforms.	E	Customisation	The product allows for the integration of an existing GIS view. A web based GIS view can be integrated in a widget within the incident record detail view or in a separated application window. Given an interface that allows for raising a zoom to location action, the GIS view can automatically focus on the incident location provided by the user. There are various alternatives for integration, that need to be specified in detail in the ECI phase. The GIS View allows for the localisation of an incident, as well as related asset information (if provided by an ERP system as outlined in IMS-CAP-015). The impact on affected services can be determined in conjunction with the DTTS solution and visualised within the GIS view. The incident progress can be tracked as specified for requirement IMS-CAP-038. Overcrowding of a platform in form of heat maps can be visualized in the GIS view, requiring external data. Additionally, the product allows network drive integration to provide specific information (in the form of documents, spreadsheets or checklists) for the relevant railway installations.
IMS-CAP-040	The ability to track the progress / monitor incidents from creation until completion. For example: • Overall status, • Time-forecast to completion, • Action completed, • Action authorisation (who, when etc.), • Assignment information (assigner, assignee, time/date of assignment), • Updates made to the record (new comments, change to 'fields' such as the incident's category, priority etc.), • Internal communications distributed, • Customer Information distributed.	E	Out of The Box	All of the exemplary data (i.e. every single action taken within the incident record and interface communication) is fully logged and flagged with an automatic system timestamp.

Identifier	Functional Requirement	Criticality E = Essa	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-041	The ability to manually and / or automatically escalate a activity or task based on a pre-defined business rules. For example: Business rules are to be configurable. Automated escalation based on: • Time boxed activities, (an incident has not 'progressed' (no record update) for a specified timeframe) • Assignee not available. Manual escalation required where: • The incident itself has risen to the next severity level. • An incident has no response plan after a specified timeframe • Category, severity, priority.	E	Customisation	The product allows an automatic (rule-based) or manual escalation of incident action items to defined roles or personnel.
IMS-CAP-042	The ability to manually prioritise incident, actions and activities. For example: • Change priority due to severity.	E	Out of The Box	The incident's priority can be set in the corresponding data field.
IMS-CAP-043	The ability to filter views and create real-time and post event incident reports. For example: • All current ('open') Incidents, • All Incidents of a given status. Views of an incident can be customised as different staff (e.g. different profile, location, team etc.) will require different information. Ability to export report based data through a standard based interface.	E	Out of The Box	The incident list allows custom filters and sorting and can be exported as .csv/.xls.
CAP-067	The ability to adjust the boundaries which define the areas of responsibility for users. For example: • Train controller boundaries / sectors (Boards), • Response teams areas of responsibility.	E	Out of The Box	The product allows the definition of boundaries/areas of responsibility for different roles, based on time and incident location.
IMS-CAP-068	The ability for users to reserve a incident number in the system without having to provide incident details.	E	Out of The Box	An incident number can be reserved providing a minimum of mandatory fields specified by the customer.
Close and Report				
IMS-CAP-044	The ability to create electronic record (package) containing all incident record details and its associated / linked data files. For example: Details may include: • Origin of the Alarm / Incident (e.g. source system, user name), • Priority, • Time of alarm, • Incident ID, • Incident Level, • Cause, • Creator, • Impact on customers. • Time and Date. Other linked data may include: • CCTV, • Phone calls recorded, • Emails, • Text message, • PDF, • Photographs.	E	Configuration	The product allows the generation of predefined electronic records.
CAP-045	The ability to provide incident information to other downstream systems in real-time. For example: • Basic incident information, • Impact on services, • Expected restoration times. Note: Impact to trips, line and station would need to be received from DTTS.	E	Out of The Box	The product provides a default XML export functionality of incident details.
IMS-CAP-046	The ability to generate defined and ad hoc reports on incident status.	E	Out of The Box	The product can generate defined and ad hoc reports.
IMS-CAP-047	The ability to export safety related incident information in real time to an external system. Note: Refer to IMS architecture for interfacing systems.	E	Out of The Box	Incident data can be exported to external systems.
IMS-CAP-048	The ability to export incident details to a data warehouse.	E	Out of The Box	Incident data can be exported to a data warehouse solution.
IMS-CAP-050	The ability to manage business rules for closing incident records.	E	Out of The Box	Business rules for closing an incident can be defined (i.e.status-depenant mandatory fields or action items).
Other Capabilities				

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-051	The ability to create scheduled reports based on predefined criteria. For example: •Annually, Monthly, Weekly, Daily, Adhoc, • Date / Time, • Incident Reports, • OCR Reports, • NIN Reports, • CAN Reports, • AM Peak Composition Reports, • PM Peak Composition Reports, • AM Peak Summary Reports, • PM Peak Summary Reports, • Delayed Crew Reports, • NIN Report - Outstanding, • NIN Report - Date Raised, • Inactive User Reports, • Other reports such as: Ministerial reports, punctuality reports, sick passengers reports, airport line performance reports, maintenance incident reports etc.	E	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom reports. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required reports. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-052	The ability to manage (C,R,U,D) predefined reporting templates. Note: Business needs are constantly evolving therefore it is envisaged that report templates will need to be updated and new report types will need to be created.	E	3rd Party	JasperReports includes a report designer that allows the creation of custom reports.
IMS-CAP-053	The ability to manage (C,R,U,D) reference data. For example: • Import reference date, • Manage the different categories of incidents, • Manage Incident coding (used for attribution), • Asset information, • Stations, • Line, • Sectors, • Fleet types. Ability to: • Create (access / import) • Read, • Update, • Delete, • Export.	E	Out of The Box	The product is supplied with a separate Data Management Client which allows the management of reference data.
IMS-CAP-055	The ability to provide access to incident information to mobile / operational staff and 3rd parties external to the ROC. For example the ability to: • Provide real-time access to users and 3rd parties, • Received incident updates from a mobile device, • Ability to create incident notifications, • Provide a mobile collaborative work place, • Optimise data for mobile devices.	E	Out of The Box	The product is supplied with a mobile client which provides users with real-time incident information. The mobile client allows response teams to capture incident information or manage action items. The product allows the distribution of incident information via SMS, email and Voicemail.
IMS-CAP-056	The ability to manually and automatically link / attach relevant information to an incident record. For example the ability to link the following types of data to incident records: • CCTV & video footage, • Photographs, • Diagrams, • Pictures, • Phone call recordings, • Documents.	E	Out of The Box	Arbitrary attachments can be uploaded in a network drive and linked to the incident record. Links to relevant incident information can be captured in the incident details.
IMS-CAP-057	The ability to create, manage and maintain workflows, templates and checklists. For example: Workflows, Checklist, Templates we require the ability to: • Create, • Read, • Update, • Delete. Workflow capabilities to manage: • Business processes, • Activities (manual and automated), • Deadlines, • Check lists, • Business rules, • Notifications, • Escalations, • User roles, • User permissions, • Process monitoring, • Administration, • Auditing. Note: It's envisaged that some safety / network rules could be incorporated into the workflows either as pointer or guidance or actions.	E	Customisation	The product's design philosophy focusses on a time critical response and resolution of incidents. Workflows are represented by configurable checklists and functional modules which control manual and automated activities, notifications and escalations and allow the capturing of incident details. Checklists and functional modules are configurable components that allow the modelling of workflows. Checklists are ordered and displayed depending on incident categories, incident location and time. Business rules can be set for action items in the checklist, for example, to automatically notify users. The product allows an in-depth administration of user roles and permissions. It is possible to monitor the overall progress of multiple incidents in the list view, while details for single incidents can be accessed through the incident view. The product integrates an audit log, which fully traces all activities that have affected at any time a specific operation, procedure, or event (see IMS-CAP-038).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-058	The ability to manage alarm business rules: For example: • Manage Hierarchy of alarms, • Automated suppression rules, • Associated workflows rules, • Notification rules (Colour, frequency, visual, brightness, audio, volume), • Trigger CCTV views. Note: Requirement related to human factors.	E	Configuration	Alarm business rules can be managed in the Administration Client.
IMS-CAP-059	The ability to manage the roles and their associated permissions. For example: • Create, • Read, • Update, • Delete. • Roles (for example: Train Controller, Shift Manager), • Groups, (Train Control, Customer Information, Signalling etc.), • Permissions (ability to supress alarm, depart workflow, assign workflow). **Note**: The roles need to be in alignment with and in consideration of roles defined in other systems.	E	Out of The Box	Roles, Groups and Permissions can be managed in the Administration Client.
IMS-CAP-060	The ability to filter /search and select incident records for viewing. For example: • Origin (e.g. source system), • Priority, • Time of alarm, • Most recently acknowledged, • Incident ID, • Incident Level, • Cause, • Creator, • Time and Date.	E	Out of The Box	The incident list represents a view of all incidents. Those can be can be filtered, searched and sorted by different incident attributes, e.g. incident location, category, time/date, origin,...
IMS-CAP-061	The ability to view or instigate raising or closing of defect records for assets whose defect has caused a delay to services. For example: • View defect records for assets, • Instigate opening defect record for a specific asset / incident, • Instigate closing a defect record for a specific asset / incident. **Note:** Defects are managed in Fault Management Systems.	E	Customisation	The IFMS interface allows the viewing, raising or closing of defect records.
IMS-CAP-062	The ability to integrate and share real-time and post event incident information with other systems. For example systems such as: • Customer Information Management System, • Dynamic Timetabling System, • Operational Video Display System (OVDS), • Business Intelligence Systems, • Calculation Engine, • Fault Management Systems, • Safety Management Systems, • External 3rd Party Systems, • Other Incident Management Systems, • Other Computer Aided Dispatch Systems (i.e. ICEMS), • ERP systems, • Geospatial Information Systems (such as Small World), • State emergency services, • Wayside Information Management System (for alarms), • TMC Incident Management Systems, • Train Location Systems / On Time Running (TLS-OTR), • Billing systems . For example information exchange patterns such as: • Bi-directional request & respond, • Pull, • Push. • Receiving incident records from 3rd part incident management systems. • Compliance with SIRI 1.3 + standard.	E	Customisation	Incident information can be sent in real-time or based on defined events (e.g. closing/completing an incident), over a variety of channels or services, as specified in IMS-CAP-025. Specific interfaces allow a deeper integration into up- and downstream systems, i.e. CIMS, DTTS, TLS-OTR, FPe, FMBS, CE, Reliance Rail, IFMS, SRS, ERP, GIS, a business intelligence solution, WIMS and 3rd party solutions. See Chapter 8 - "Interfaces" of the document "Understand Requirements_FRQ.pdf" for a detailled interface description.
IMS-CAP-063	The ability to integrate with a day of operation timetabling system. For example: • Receive alerts when services are experiencing delays, • Receive transposition details (i.e. add stop, skipped stop, terminate, cancel run etc.) • Receive lists of services affected, • Provide estimated restoration / recovery times • Compliance with SIRI 1.3 + standard.	E	Customisation	The interface to the DTTS allows the interchange of incident and alert information (including affected services and estimated restoration and recovery times) and transportation details (SIRI SX, PT and ET).
IMS-CAP-064	The ability to integrate with a Customer Information Management System. For example: • Provide cause impact and advice details, • Provide estimate recovery times. • Compliance with SIRI 1.3 + standard.	E	Customisation	The interface to the CIMS allows the interchange of incident information and recovery times (SIRI SX).

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-065	The ability to integrate / display views on a large video display. For example: • Display dashboard type views, • Display GIS views, • Display location of response teams, • Display the location of a incident.	E	Out of The Box	It is possible to display the required information on a large video display. The product provides data for dashboard and GIS displays in real time and allows visualisation in a standard browser.
IMS-CAP-066	The ability to support the management of multiple incidents simultaneously. For example: • Different users working on different incidents, • Same users supporting different incidents.	E	Out of The Box	It is possible for different users to process different incidents. One user can open multiple incidents for processing at the same time. Multiple users can process a single incident at the same time. The product detects data conflicts and provides different mechanism for their resolution.
IMS-CAP-069	The ability for users to configure their own user preferences. For example: • Set up notifications of interest based on incident type, area of responsibility, • Set up method of notification, text, email etc., • Set up dashboard views. Note: Authorisation and Authentication is covered in the NFR's.	E	Out of The Box	Users can configure their personal notification rules and outbound channel in the client application. Personal dashboard views can be configured in the integrated 3rd party component as specified in IMS-CAP-079.
IMS-CAP-070	The ability to manually and automatically attribute further details to incident records. For example: • Who is responsible for root cause analysis, • Who the incident belongs to (Business unit, contract etc.), • Incident Delay Attribution (Late, very late, cancelled etc.), • Incident status (Open, Closed etc.), • Location of a incident, • Force majeure, • Attribution reporting, • Ability for attribution through mobile devices. Note: There are business rules (contractual timeframes) in which externals need to be informed of incident details.	E	Out of The Box	Further incident details can be manually or automatically (based on business rules) added to the incident description.
IMS-CAP-071	The ability to trigger viewing of specific CCTV cameras based on predefine alarms and business rules. For example: • Trigger CCTV cameras once a emergency help point has been activated (i.e. on set, on station, in lift etc.), • Trigger CCTV cameras on plats forms that are over crowded.	E	Out of The Box	The product is capable of catching alerts from CCTV cameras on predefined events and can display live and recorded video feeds.
IMS-CAP-072	The ability to assist users in managing / arranging alternative transport with 3rd party providers. For example: • Notification, • Booking, • Tracking progress (i.e. ETA), • Communicating with station staff. Note: This requirement is also covered under workflow requirements.	D	Out of The Box	3rd party providers for alternative transports can be tied to the product's responsibility model, allowing the user to access booking information or communication with station staff over various outbound channels, based on the incident location. Progress tracking can be assisted with a specific checklist.
IMS-CAP-073	The ability to provide users with visibility of pre-planned special events / track work. For example: • Easter show, • Carols in the domain, • Track work - daily summary reports, • Road, bus, ferry and light rail.	E	Configuration	The Administration Client allows the configuration of special events in advance. The User Client can display a list of upcoming events.
IMS-CAP-074	The ability to provide users with access to images, photos and documents to aid in the communication of incident details. For example: • GIS imagery, • Access to reference data, • Ability to edit imagery and distribute updates.	E	Configuration	The User Client allows the upload of unstructured data to a network drive folder for the specific incident (see IMS-CAP-056). It is possible to send incident details and file attachments to designated users or user groups. The GIS View provides the user with a toolset for drawing objects into the GIS view and publishing updates to other users.
IMS-CAP-076	The ability to manage (C,R,U,D) meta data for records within the system. For example: • Create, • Read, • Update, • Delete. Meta data examples: Location, Creator, Alarm Type etc.	E	Customisation	It is possible to manage meta data for incident records.
IMS-CAP-078	The ability to assist / prompt users to help in the diagnosis of the root cause of a incident / defect.	E	Out of The Box	The product aids the user in diagnosing the root cause of the incident. For example by: - checklist-based gathering and display of incident information - detailed information from interfaces to other incident management systems - correlating data from upstream or integrated systems (e.g. relevant assets, incident location details, weather information..) - display of alarm sources

Identifier	Functional Requirement	Criticality E = Essa	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-079	The ability to manage (C,R,U,D) dashboard views that will be available to users. For example: • Create, • Read, • Update, • Delete. • Flexible filtering and data visualisation, • Shared views, • Views including GIS, • Views including internal and external incident information.	E	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom dashboard views. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required dashboard views. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-080	The ability to provide users with the ability to access and view dashboards For example: • Access given to those who are within ROC, • Access provided via mobile device. • Information on a dashboard is real-time, • Tables, graphs, hot spots, GIS views etc.	E	3rd Party	The recommended 3rd party tool (see IMS-CAP-079) provides a browser based dashboard view which allows users to access and view dashboards on a broad range of devices, e.g. large video displays or mobile devices. The product provides those dashboards with real-time data.
IMS-CAP-081	The ability to view a incidents sequence of events in time order in either real-time or post incident. For example: • Real-time replay to help identify what actions have been activated, • Post event replay to learn and improve process and procedure	E	Customisation	The product's audit log enables a full reconstruction of the incident sequence. It is possible to provide a replay functionality for displaying the actions taken in the incident resolution.
CAP-082	The ability to manage (C,R,U,D) a contact management details. For example: • Telephone, email, mobile, address, • Provide access contact details for internal and external 3rd parties, • List of on call response staff. **Note:** This may require integration with existing legacy systems.	E	Out of The Box	The product's Administration Client allows management of contact details. The User Client can display corresponding response staff and allows the distribution of contact details.
IMS-CAP-083	The ability to simulate how a incident recovery may unfold. For example: • Based on actions assigned, • Based on historical information (provide improved estimated response / recovery times), • Based on feedback received from end users.	I	Customisation	It is possible to implement a rule set that allows a simulation of the actual incident resolution based on incident details (estimated response and recovery times and assigned actions).
IMS-CAP-084	The ability to view and monitor resource constraints. For example: • Monitor availability of resources, • Monitor shift start and end times, • Access competence levels. Note: This will be useful information prior to dispatching the relevant resources to assist in the recovery of a incident.	E	Out of The Box	The product is capable of displaying available response teams as outlined in IMS-CAP-028. Shift start and end times as well as competency levels of resources can be managed in the Administration Client
IMS-CAP-085	The ability for the system to dynamically learn and improve processes based on historic data. For example: • Ability to change activities based on timeframes, • Ability to suggest alterations to predefined support plans due to identified bottle necks.	I	Future	
IMS-CAP-086	The ability to capture incidents for existing incident management systems. i.e. Act as the single point in which all incident records are created. Note: It is envisaged that IMS will become the single point in which incident records are created. After which IMS will pass the incident records down to the existing incident management systems. For example: • IFMS, • SRS, • FMS.	E	Customisation	The product will integrate with the existing incident management systems for cross referencing incidents, sharing incident information or raising and closing incidents.

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
Accessibility			
NFR-ACC-001	The component/(s) shall be accessible via standards based browser environment or thin client, for example: • Remote Desktop Protocol (RDP) • Citrix	E	Out of the Box
NFR-ACC-002	The component/(s) shall be accessible remotely to 3rd parties, based on business rules and appropriate permission, for example: • Transport Management Centre • New South Wales Police Force	I	Out of the Box
NFR-ACC-003	The solution shall enable the dynamic reconfiguration of workstations to meet operational demand, interacting with the necessary infrastructure and telecoms systems to enable communications and control authorisation to move with a workstation.	E	Out of the Box
Auditability			
NFR-AUD-001	The solution shall provide the ability to tailor audit requirements by component. The audit logs shall contain at least the following security relevant information: • identification and authentication of users • date and time that the event occurred and was recorded • source system, device or application, e.g. IP address, application, or assigned name • type of action, for example include authorise, create, read, update, delete and accept network connection • before and after values when action involves updating a data element • any status, response or errors values generated as a result of the event or activity.	E	Out of the Box
NFR-AUD-002	The solution shall provide the ability to tailor audit requirements by component. The events to be recorded in activity and/or audit logs need to include but not necessarily be limited to: • start up and the stopping or shutdown of: o applications and databases o operating systems, including servers o infrastructure components such as firewalls, routers and switches • connection initiation, establishment and termination, including: o source and destination address o desired or requested service • information received from external interfaces as well as information dispatched to other systems • errors that occur in any infrastructure, operating system or application component • successful activities initiated by all individuals, whether authorised or not • changes to production systems and applications • relevant application and/or process/thread activity • creation, modifying, deleting and disabling or revoking of user permissions and access • records created by security systems such as anti-virus/malware tools, IDS/IPS (Intrusion Detection Systems / Intrusion Prevent Systems), firewalls and access/identity management tools	E	3rd Party
NFR-AUD-003	The solution shall ensure audit logs are stored and maintained in accordance with the relevant security classification level assigned to the log information, in an un-editable format based on date and/or other recorded audit details to be specified.	E	Out of the Box
NFR-AUD-004	The solution shall ensure the audit logs shall be stored in a device separate to the device or application that created the logs. This is to: • minimise the potential for deliberate corruption or unauthorised deletion of logs • permit the use of shared logging infrastructure, including integrity mechanisms, minimising cost overheads and chronologically synchronising logs • improve the ease of correlating events across applications, systems and infrastructure.	E	Out of the Box
NFR-AUD-005	The solution shall be designed and implemented to minimise the recording of sensitive or personal identifying information in logs and audit trails unless such detail is necessary for specific business or operational reasons.	E	Out of the Box
NFR-AUD-006	The solution shall provide functionality to interrogate audit logs and raise alerts on critical and suspicious activity.	E	Out of the Box
NFR-AUD-007	The solution shall provide the ability to restrict access to audit logs, to system and appropriately trusted application administration and support staff.	E	Out of the Box
NFR-AUD-008	The solution shall provide Auditors direct access to the audit system to view audit logs and/or the ability to export to a reporting engine.	E	Out of the Box
NFR-AUD-009	The solution shall record all access of audit logs. These log records in turn require protection as per NFR-AUD-003 to NFR-AUD-008	E	Out of the Box
NFR-AUD-010	The solution shall ensure logging facilities and log information are protected against tampering.	E	Out of the Box
NFR-AUD-011	The solution shall support variable retention policies for audit logs, dependent upon Sydney Trains Log Retention Policy "ICT-SGD-70107 Logging".	E	Out of the Box
Availability			
NFR-AV-003	The component/(s) shall ensure that the installation of patches / hot fixes etc do not require the system to be taken down or reboot.	E	Configuration
NFR-AV-004	The component/(s) shall seamlessly operate across multiple physical data centres.	E	Out of the Box
Interoperability			
NFR-IO-001	The component/(s) shall support the following transport data interchange standards: - GTF/GTFS-R - SIRI (v1.3 +)	E	Customisation
NFR-IO-002	The component/(s) shall support the extraction of data based on ETL standards.	E	Out of the Box
NFR-IO-003	The component/(s) shall support interfacing with email systems supporting SMTP.	E	Out of the Box
NFR-IO-004	The component/(s) shall be compatible with common desktop browsers, for example: • Internet Explorer (*note: v8.0 is currently deployed within Sydney Trains*) • Safari • Chrome • Firefox	E	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-IO-005	The component/(s) shall be compatible with common mobile browsers, for example: • iPhone/iPad • Android • Blackberry	E	Out of the Box
NFR-IO-006	The component/(s) clock shall be synchronised with the definitive master clock.	E	Out of the Box
Maintainability			
NFR-MNT-001	The component/(s) shall support Sydney Trains backup rotation requirements without the need to restrict end user access.	E	Out of the Box
NFR-MNT-004	The Disaster Recovery system shall ensure all audit logs are backed up on a regular basis.	E	Out of the Box
NFR-MNT-009	The component/(s) shall provide an automatic way of migrating the data of existing database in case of data structure change during transfer to new versions.	E	Out of the Box
NFR-MNT-010	The component/(s) shall provide the ability to revert to a previous release.	E	Out of the Box
NFR-MNT-011	The component/(s) shall ensure support activities can be completed remotely to reduce operational interruption.	E	Out of the Box
NFR-MNT-012	Maintenance task / service activities must be able to be completed without operational interruption.	E	Out of the Box
Manageability			
NFR-MGN-001	The component/(s) shall support systems management standards such as SNMP.	E	Out of the Box
NFR-MGN-002	Critical errors (e.g. back up failure) that occur within the component/(s) shall provide warning message to the system administrator (e.g. via SMS, email). These alarms must raise an incident within the Sydney Trains Incident Management System.	E	Out of the Box
Performance			
NFR-PER-001	The component/(s) shall provide a response time for all functions (e.g. application loading, screen open and refresh times) below 2 seconds under peak loads. All components should have a fit for purpose response time.	E	Out of the Box
NFR-PER-002	The component/(s) shall have the ability to not impact system performance while auditing and monitoring of usage.	E	Out of the Box
Portability			
NFR-PO-001	In the event of a requirement to apply a patch/upgrade, the component/(s) shall automatically port any customisation authorised by the application supplier.	E	Out of the Box
NFR-PO-002	The component/(s) shall support ease of migration to new technology (hardware or software) as and when it becomes available to the market.	E	Out of the Box
Reliability			
NFR-REL-001	The component/(s) shall provide the ability to retain all electronic files, at least until confirmation of a successful exchange / transfer process. This is a procedural safeguard, to ensure that records are not deleted before successful exchange / transfer is reported from the recipient.	E	Out of the Box
Reporting			
NFR-RPT-001	The component/(s) shall support standards based printers, formats, page sizes, for example: • A0 for zigzags.	E	Out of the Box
Scalability			
NFR-SCA-001	The component/(s) shall support simplicity of scaling options both horizontally and vertically, for example add more users to a node, add more nodes.	E	Out of the Box
Security			
NFR-SEC-001	The component/(s) shall support integration with Sydney Trains' Identity and Access Management component/(s) (Oracle) to perform authentication. Sydney Trains authentication process uses Single Sign On / Same Sign On standard (e.g. provide single sign on access to component/(s) once a user is logged on to the Sydney Trains network (via a Sydney Trains computer or a VPN). Content classified as 'Protected' will require the user to provide their user name and password to access it.	E	Configuration
NFR-SEC-002	The component/(s) shall support LDAP authentication.	E	Out of the Box
NFR-SEC-003	The component/(s) shall support that USER_ID's are only used to identify and reference users and not as proof of identity or authentication mechanism.	E	Out of the Box
NFR-SEC-004	The component/(s) shall support access control checks, if a web application, to access protected URL, must not be bypassable by a user that simply skips over the page with the security check.	E	Out of the Box
NFR-SEC-005	The component/(s) shall ensure, if a web application, administrator access through the front door of the site is not possible.	E	Out of the Box
NFR-SEC-006	The component/(s) shall provide the ability to apply a Segregation of Duties (SoD) matrix for roles and responsibilities, which is easily updated via an administrator user interface. This may include • access levels (role based, field level, category/content) • password requirements - length, special characters, expiry, recycling policies • inactivity timeouts – durations, actions • re-authentication after timeout.	E	Out of the Box
NFR-SEC-007	The component/(s) shall provide the ability to provide risk and SoD analysis at user, role, transaction, and authorisation object field value levels.	I	Customisation
NFR-SEC-008	The component/(s) shall provide the ability to simulate user role changes, in order to identify hidden risks at the user level, before the introduction of a user change.	I	Customisation
NFR-SEC-009	The component/(s) shall provide the ability to enable automation of identification of SoD conflicts at each user level, together with the ability to generate and distribute reports detailing SoD conflicts and mark those that have an approved exception.	I	Customisation
NFR-SEC-010	The component/(s) shall support a "change password" function, whereby users are required to provide both their old and new password when changing their password.	E	Out of the Box
NFR-SEC-011	The component/(s) shall ensure, if a web application, authentication and session data is not submitted as part of a GET, POST should always be used instead.	E	Out of the Box
NFR-SEC-012	The component/(s) shall provide the ability to automatically notify designated security administrators of unauthorized access or attempted access and record in a log with reporting.	E	Out of the Box
NFR-SEC-013	The component/(s) shall not indicate whether it was the username or password that was wrong if a login attempt fails.	E	Out of the Box
NFR-SEC-014	The component/(s) shall inform users, if a web application, of the date/time of their last successful login and the number of failed access attempts to their account since that time.	E	Out of the Box
NFR-SEC-015	The component/(s) shall ensure, if a web application, authentication pages are marked with all varieties of the no cache tag to prevent someone from using the back button in a user's browser to back up to the login page and resubmit the previously typed in credentials. Many browsers now support the "autocomplete=false" flag to prevent storing of credentials in autocomplete caches.	E	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-SEC-016	Remote access to the ROC components by third party users including Service Providers (e.g. remote system managers, developers. technical support etc.) can only be done by: • Corporate Virtual Private Network (F5-Firepass).	E	Out of the Box
NFR-SEC-017	The servers running ROC systems should be isolated on a separate network segments in order to prevent attackers from using them as a platform for mounting attacks on systems in other segments and vice versa.	E	Out of the Box
Usability			
NFR-USE-001	The component/(s) shall be designed to minimise cognitive load. Use of configurable audible alarms and visual stimulus must be designed to entice an appropriate response and to differentiate between critical and non-critical events (to be determined by business rules).	E	Out of the Box
NFR-USE-002	The component/(s) shall ensure alerts are distinctive, sufficiently loud (at least 5dB(A) above ambient noise level), of an appropriate frequency range (between 500Hz to 3000Hz) and shall not disturb or be confused with other operators alerts.	E	Out of the Box
NFR-USE-003	The component/(s) shall provide the ability to change character size, font, contrast and colour of displays to: • allow for the use of more or larger monitors • maximise viewing distance • reduce focal convergence for operators (related to eye strain) • reduce the impact on the operator of heat from monitors.	E	Configuration
NFR-USE-004	The component/(s) shall provide the ability for Administrators to perform configuration tasks without customisation and vendor support. These tasks may include: • maintain all value lists • maintain all field labels • maintain data filters • maintain workflows • maintain reports • hide/show and reorder columns • add data filters.	E	Configuration
NFR-USE-005	The component/(s) shall provide the ability for Administrations to add more fields to the data input screens for capturing additional business specific information without having to write any code. These fields shall be configured without creating additional tables or without the additional effort of referencing the new fields to the existing fields on the screen. The user shall also be able to define the data type and the data length of the additional fields without having to write any code.	I	Configuration
NFR-USE-006	The component/(s) shall have unified, easy, flexible and user friendly interface enabling, for example, the following settings: • personal user menu • personal user settings • field placement on screen • field composition on screen.	E	Customisation
NFR-USE-007	The component/(s) shall support multiple screen sizes and resolutions. Minimum display resolution shall be 1280x1024 pixels (design aim of 1600x1200).	E	Out of the Box
NFR-USE-008	The component/(s) shall not reduce workspace area if Branding were applied to that component.	E	Out of the Box
NFR-USE-009	The component/(s) shall provide online help which is contextual and target the Sydney Trains users.	I	Out of the Box
NFR-USE-010	The component/(s) shall ensure all user interfaces have an Australian locale, for example dates displayed in Australian format dd/mm/yyyy, dictionaries Australian, etc.	E	Out of the Box
NFR-USE-011	The component/(s) shall be consistent with common interface conventions and best practices, for example: • support minimal keystrokes/typing (e.g. provide reference data via drop down list opposed to free text fields) • quick, simple and user friendly	E	Out of the Box
NFR-USE-012	The component/(s) shall perform all functions with keyboard support (mouse is not mandatory).	D	Out of the Box
NFR-USE-013	All component/(s) shall be homogenous with respect to keyboard use, screen layout and menu operations with Graphic User Interface (GUI) support.	D	Out of the Box
NFR-USE-014	The component/(s) shall have facility to display confirmation / warning windows, for example deletes, changes.	E	Out of the Box
NFR-USE-015	The component/(s) shall be able to gracefully handle any feasible set of inputs, any errors that can be generated by internal components such as system calls, database queries, or any other internal functions. For example: • when errors occur, the site should respond with a specifically designed result that is helpful to the user without revealing unnecessary internal details • error messages must be produced in meaningful, plain English, and logged so that their cause can be reviewed.	E	Out of the Box
NFR-USE-016	The component/(s) shall include progress indicators while performing functions greater than 2 seconds.	E	Out of the Box

Transport Sydney Trains

Detailed Technical Business Requirements Specification (DTBRS)

Incident Management System (IMS) – Release 1

Rail Operations Centre Program

Approved by: Director Operations
Issue Date: 18/12/2015
Review Date:
Document Custodian: ROC Technology Manager

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Sponsor	Howard Collins, Chief Executive	Sydney Trains
Sponsor's Delegate	Neil Brown, ROC Transformation Director	Customer Service
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Document Control

Revision History

Version	Author	Issue Date	Changes
0.1	Aaron Mathews	19 October 2015	Initial draft
0.2	Aaron Mathews	02 November 2015	Updated draft distributed for project review.
0.3	Aaron Mathews Deepali Mistry (Integration requirements)	08 November 2015	Updated Integration & Data Requirements.
0.4	Aaron Mathews	12/11/2015	• Update fleet controller data requirements • Add UC diagrams/update UC's • Incorporate comments from AccessHQ
0.5	Aaron Mathews	16/11/2015	Update with initial changes resulting from project review and business walkthrough session. Distribute for business review.
0.6	Aaron Mathews	27/11/2015	Update with comments from project/business review.
1.0	Aaron Mathews	18/12/2015	Accept changes. Approved baseline resulting from detailed design phase.

Signatories

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Approved By

Role	Name	Signature/Email Reference	Date
Director Operations	Tony Eid		

Table of Contents

1. Introduction

1.1 Document Purpose

The purpose of the Detailed Technology Business Requirements Specification is to define the detailed project requirements and provide a requirements baseline from which the project solution is managed and variations are tracked.

1.2 Background

The Rail Operations Centre (ROC) is a Sydney Trains led program that seeks to improve management of the current Day of Operations activities and improve the delivery of services for Sydney Trains and NSW Trains and their customers. The ROC Program consists of:

1. Infrastructure: a new ROC building
2. People: co-location of Day of Operations functions into the ROC
3. Technology: four new system capabilities
    I. Day of Operations Timetable System "DTTS"
    II. Incident Management System "IMS"
    III. Customer Information Management System "CIMS"
    IV. Operational Visual Display System "OVDS"
4. Processes: new improved ways of working enabled by all of the above

The ROC vision supports the strategies of TfNSW, Sydney Trains, and NSW Trains to transform the customer experience in line with their vision of "putting the customer at the heart of everything we do".

Better coordination, communication, and management will be achieved through the ROC, which will co-locate teams and transform the processes, systems, and communications for Day of Operations functions. This co-location is expected to include computer based signalling locations, train control, security, customer information, fleet management, asset monitoring and incident response functions.

The transformation will deliver consistent, accurate, timely and up to date information to customers about delays and enable faster incident resolution and service recovery. It will provide the operational management of the Sydney Trains network with a highly coordinated customer focus and will support the realisation of benefits from future initiatives including major infrastructure programs, the Rail Futures Strategy, and future business model changes.

From a technology perspective the ROC Implementation Strategy consists of four releases:

1. R1: New IMS
2. R2: New DTTS and CIMS
3. R3: Integration of IMS, CIMS and DTTS
4. R4: New OVDS and a new ROC Building

1.3 References

This document should be read in conjunction with

Document Name	Network Location or Documentation Link
Solution Architecture Document	http://sps.rail.nsw.gov.au/sites/ROC/Technology/Forms/AllItems.aspx
Business Processes Model	Holocentric Modeler

Incident Management Framework	http://intranet.sydneytrains.nsw.gov.au/directorates/operations-directorate/network-operations/incident-emergency-response/emergency-preparedness/incident-management-framework
IT Service Access and Usage Policy	http://intranet.sydneytrains.nsw.gov.au/__data/assets/pdf_file/0012/48000/ICT-Service-Access-and-Usage-Policy.pdf
NGE 214 Network Incident Notice (NIN)	http://railsafe.sydneytrains.nsw.gov.au/trim/rules-general?RecordNumber=D2013%2F77639
OSP 20 Reporting Incidents	http://railsafe.sydneytrains.nsw.gov.au/trim/secure-library/secure-library-osp?RecordNumber=D2013%2F77931
OSP 12 Responding to an Incident	http://railsafe.sydneytrains.nsw.gov.au/trim/secure-library/secure-library-osp?RecordNumber=D2013%2F77923
UIC Code	http://www.uic.org/com/IMG/pdf/UIC_Leaflet_450-2.pdf

1.4 Scope

1.4.1 In-Scope

The following items are deemed in scope for Release 1.

Scope ID Number	Scope Item - Title/Description
IMS_SC_01	Manually creating Notifications (Network Incident Notifications & Delay Reports)
IMS_SC_02	Actioning Notifications
IMS_SC_03	Creating Incidents
IMS_SC_04	Managing Incidents
IMS_SC_05	Outbound Communications
IMS_SC_06	Resolving/Closing raised Incidents
IMS_SC_07	Reporting
IMS_SC_08	Attribution
IMS_SC_09	System Administration
IMS_SC_10	Legacy System Integration
IMS_SC_11	Publishing Incident Information to 3rd party consumers

1.4.2 Out-of-Scope

The following items are deemed out of scope for Release 1.

Scope ID Number	Out-Of-Scope Item - Title/Description
IMS_OSC_01	Integration with Sydney Trains' VCS. To be investigated for potential inclusion in a future release.

Scope ID Number	Out-Of-Scope Item - Title/Description
IMS_OSC_02	Automated Notification/Incident Creation from ST systems BBT/WIMS. To be investigated for potential inclusion in a future release.
IMS_OSC_03	Defect management and fault resolution processes.
IMS_OSC_05	2-way SMS. Only outbound SMS will be enabled for Release 1.
IMS_OSC_06	Integration with CCTV retrieval systems. Process to request CCTV footage from the SMF will occur outside of the IMS.
IMS_OSC_07	REM iOS Mobile Client (Release 3 integration)
IMS_OSC_08	Decommissioning of any Incident Management system which will no longer be used during the Day of Operations as a result of the new ROC Incident Management system.
IMS-OSC-09	Integration with Emergency Services CAD systems. To be investigated for potential inclusion in a future release.
IMS_OSC-10	Recording person information in Notification records (persons injured & persons of interest). To be investigated for potential inclusion in a future release.

2. Assumptions, Constraints and Dependencies

2.1 Assumptions

Ref #	Assumption	Impact (if not true)
IMS_AS_01	Records in legacy Incident systems will not be migrated to the new solution.	Records requiring migration shall be manually rekeyed. True purpose and meaning of data may be lost in translation to fit new data structure.
IMS_AS_02	All interactions with the system require connection to the Sydney Trains network, including transactions made from mobile devices.	Additional cost, risk and complexity due to increased infrastructure and security requirements.
IMS_AS_03	Incident records will not be automatically created via interface with external systems, as per best practice advised by product vendor (Frequentis).	Customisation to core product will be required.
IMS_AS_04	Access and permissions for saved CCTV footage is maintained outside of the IMS by the relevant system/process.	System customisation.
IMS_AS_05	A product gap analysis will be performed on the legacy IIMS and SRS incident management systems with considerations to providing a solution to decommissioning the systems.	Impact on active incidents, regulatory reporting, archiving and potential decommissioning is not understood.
IMS-AS-07	In lieu of VCS integration, users will NOT manually record when phone calls are made during incident management process.	Users will need to manually record when Incident-related calls are made.
IMS-AS-08	Release 1 is to ensure regulatory, external and essential internal reporting to continue to be available. Further detailed analysis is required to define reporting requirements.	Reporting needs may not be met.
IMS-AS-09	IMS will be the single system for the management of all the incidents that will be managed / coordinated from the ROC	• Business users will continue to be faced with a number of disparate incident reporting systems and fault management systems, requiring dual-keying of incident record details and/or decisions as to which system to record the incident in. • Business workflow and template support only partly available during an incident • Ongoing cost of maintaining multiple incident systems

2.2 Constraints

Ref #	Constraint	Validated By

Ref #	Constraint	Validated By
IMS_CS_01	The Sydney Trains implementation of REM shall fit within the OOTB solution as much as possible.	REM is an industry specific 'off-the-shelf' solution.
IMS_CS_02	IMS_CS_02 DTTS is not implemented in Release 1	DTTS integration scheduled for ROC Release 3
IMS_CS_03	CIMS is not implemented in Release 1	CIMS integration scheduled for ROC release 3

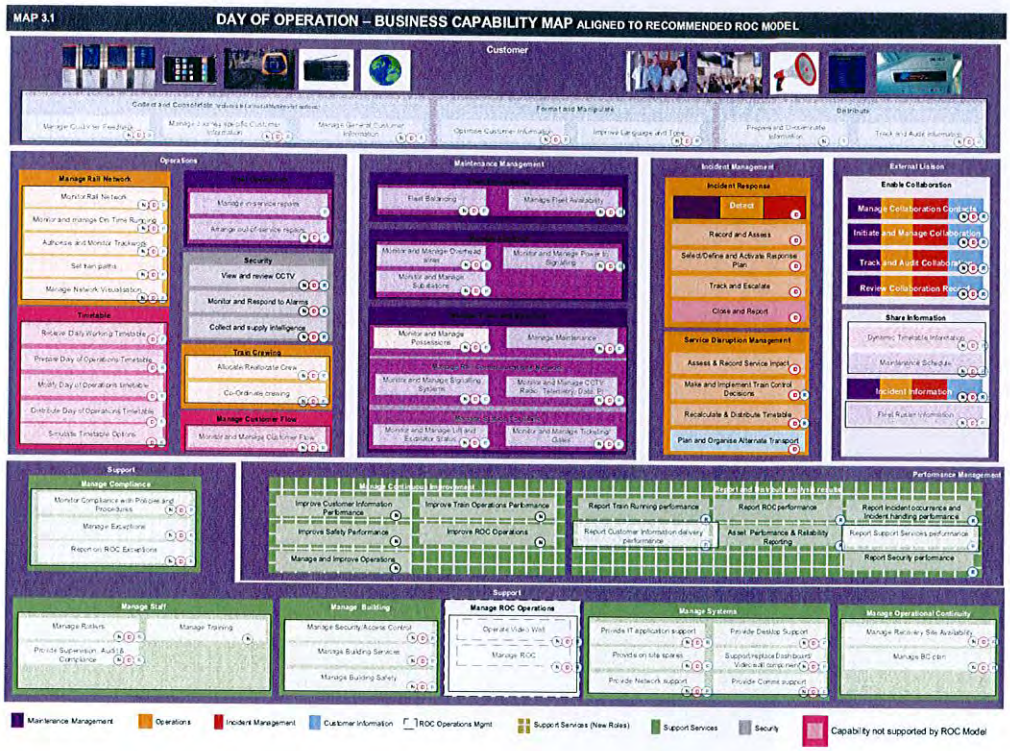
2.3 Dependencies

Ref #	Dependency
IMS_DP_01	Scope, schedule and business roll-out of interdependent project - **Enterprise Asset Management** (EAM) • Consolidation of asset data management and asset lifecycle management • Currently planned for 3 releases Jan 2016, Jul 2016 and Jan 2017 Staggered business roll-out by asset type (e.g. diesel, then electric, then waratah), incorporated staggered data move from old to new system and decommission of old system
IMS_DP_02	Scope, schedule and business roll-out of interdependent project - **Alternative Customer Journey Plans** (ACJP) Progressive development of ACJP and deployment via SharePoint. IMS requires the SharePoint hyperlink if/where availability or alternatively the PDF.
IMS_DP_03	Scope, schedule and business roll-out of interdependent project - **Sydney Trains Integrated Management System** (SOPHIA) Hyperlink supporting artefacts (ie: work instructions, operating procedures) if/where availability or alternatively the PDF.
IMS_DP_04	Availability of a single source of truth for Master Data for system configuration (eg: Network Geography, Personnel rostering and contact details)

3. Business Context Diagram

The Business Capability areas of impact relevant to the key 'Day of Operations' business processes impacted by ROC program for Incident Management are highlighted

:



Operational Impacts

1. Enabling transformational change in the management of incidents that cause disruption to the "Day of Operations" from current practice of performing post-incident/event data capture to a proactive, collaborative and efficient management of incident resolution.

2. Provide a single source of truth of incident management information for customers and staff in near real-time.
   Significant streamlining of the Incident Management processes, reducing number of telephone conversations for obtaining incident information, enabling "Decision Makers" to concentrate on resolving disruptions and efficiently restoring services.

3. Pre and Post incident processes and capabilities will continue to be conducted in current processes.
   Capturing incident information will shift from post incident activity to near real time activity to support "Day of Operations".

4. Incident management workflow, incident categories, checklists and input fields can be flexibly configured.

4. Technical Business Requirements

4.1 Functional Requirements

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-001	Create Notifications	Create Network Incident Notice (mobile)	The system shall provide the ability for users to create a Network Incident Notice (NIN) from a mobile device.	Must	Manual notification of incident or potential incident; IMS Mobility	Create Notification
IMS-FR-002	Create Notifications	Create Delay Report (mobile)	The system shall provide the ability for users to create a Delay Report from a mobile device.	Must	Manual notification of incident or potential incident; Link train timetable data manually to incident records; IMS Mobility	Create Delay Report
IMS-FR-003	Create Notifications	Create Network Incident Notice (web browser)	The system shall provide the ability for users to create a Network Incident Notice (NIN) from a desktop PC using web browser.	Must	Manual notification of incident or potential incident	Create Notification

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-004	Create Notifications	Create Delay Report (web browser)	The system shall provide the ability for users to create a Delay Report from a from a desktop PC using web browser.	Must	Manual notification of incident or potential incident; Link train timetable data manually to incident records	Create Delay Report
IMS-FR-005	Create Notifications	Multiple Notification Categories	The system shall allow recording of multiple categories per Notification.	Must	Manual notification of incident or potential incident	Create Delay Report; Create Notification
IMS-FR-006	Create Notifications	Notification Category Level	The system shall allow users to select an Incident Category at any category level when creating a Notification. [ref. Appendix A - Incident Categories].	Must	Manual notification of incident or potential incident; Manual Incident record categorisation	Create Delay Report; Create Notification
IMS-FR-007	Create Notifications	Derive Notification Train Details	Where a Trip Number is entered against a Notification, the system shall automatically retrieve and populate the associated Run Number and Set Number.	Must	Manual notification of incident or potential incident	Create Delay Report; Create Notification
IMS-FR-008	Create Notifications	Derive Reporter Details	The system shall automatically populate the Name, Position and Phone Number of Reporter fields with the details of the logged in user.	Should	Manual notification of incident or potential incident	Create Delay Report; Create Notification

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-009	Create Notifications	Unique Notification Identifier	The system shall generate a unique identifier for each Notification created.	Must	Manual notification of incident or potential incident	Create Delay Report; Create Notification
IMS-FR-010	Create Notifications	Timestamp Received	The system shall automatically record the time and date the Notification is received.	Must	Manual notification of incident or potential incident	Create Delay Report; Create Notification
IMS-FR-012	Create Notifications	Submit Notifications with NFA	The system shall allow users to create and submit Notifications flagging that no further action is required	Should	Manual notification of incident or potential incident	Create Notification
IMS-FR-191	Create Notifications	Cancel Create Notification	The system shall allow users to cancel creating a draft Notifications before submitting.	Must	Manual notification of incident or potential incident	Create Notification; Create Delay Report
IMS-FR-192	Create Notifications	Add Image to Notification	The system shall allow users to attach an image to a Notification.	Must	Manual notification of incident or potential incident; Incident record attachments	Create Notification; Create Delay Report

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-193	Create Notifications	Add Video to Notification	The system shall allow users to attach a video to a Notification.	Must	Manual notification of incident or potential incident; Incident record attachments	Create Notification; Create Delay Report
IMS-FR-200	Create Notifications	Confirm Submit	The system will provide the user confirmation where a new Notification is successfully submitted.	Should	Manual notification of incident or potential incident	Create Notification; Create Delay Report
IMS-FR-208	Create Notifications	Submitted in Open State	The system shall set a default status of a Notification to Open when submitted.	Must	Manual notification of incident or potential incident	Create Notification; Create Delay Report
IMS-FR-228	Create Notifications	Variance Report	The system shall automatically retrieve the stopping pattern and delay minutes (per station) for a given trip number.	Should	Manual notification of incident or potential incident	Create Notification
IMS-FR-229	Create Notifications	Select Retrieved Delay	The system shall allow users to select a location/delay minutes to populate the Notification record.	Should	Manual notification of incident or potential incident	Create Notification
IMS-FR-013	List Notifications	Notification Visibility	The system shall make Notifications visible to a user role based on the Incident Category and Location assigned to the Notification. [ref Appendix B - Responsibility matrix]	Must	Manual notification of incident or potential incident	View Notification List; View Notifications Raised

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-014	List Notifications	Open Notifications	The system shall display a list of all Open Notifications visible to the user role.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List; View Notifications Raised
IMS-FR-015	List Notifications	Closed Notifications	The system shall allow users to view Closed Notifications visible to their user role within the Notification list.	Must	Manual notification of incident or potential incident	View Notification List; View Notifications Raised
IMS-FR-016	List Notifications	Alert New Notifications	The system shall alert the user where a Notification becomes visible to their user role.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List
IMS-FR-017	List Notifications	Unread Notifications	The system shall highlight unread Notifications to the user within the Notification list.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List
IMS-FR-018	List Notifications	Notification Read when Selected	The system shall declare a Notification as 'read' when it is selected within the list.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-019	List Notifications	Display Details	The system shall display all details of the Notification when it is selected from the list.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List; View Notifications Raised
IMS-FR-020	List Notifications	Highlight Open Notifications	The system shall highlight Open Notifications to the user within the Notification list.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List
IMS-FR-021	List Notifications	Notification Closed Conditions	The system shall declare a Notification as Closed when it is • used to create an Incident record; or • linked to an Incident record, or • marked as 'closed' where no further action will be taken.	Must	Manual notification of incident or potential incident	View Notification List
IMS-FR-022	List Notifications	Notification Severity	The system shall display the severity recorded against Notifications to the user in the Notification list.	Must	Manual notification of incident or potential incident	View Notification List; View Notifications Raised
IMS-FR-023	List Notifications	Highlight High Severity	The system shall highlight Notifications with a Severity >1 to the user within the Notification list.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List; View Notifications Raised

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-024	List Notifications	Top of List High Severity	The system shall promote Notifications with a Severity >1 to the top of the Notification list.	Must	Manual notification of incident or potential incident; IMS Safety	View Notification List; View Notifications Raised
IMS-FR-025	List Notifications	Text Search Notifications	The system shall allow users to filter listed Notifications by free-text entry against displayed column values.	Must	Manual notification of incident or potential incident; Incident record search and retrieval	View Notification List; View Notifications Raised
IMS-FR-026	List Notifications	Notification Date Range Search	The system shall allow users to filter listed Notifications using date range parameters (to/from) against the date the Incident occurred.	Must	Manual notification of incident or potential incident; Incident record search and retrieval	View Notification List; View Notifications Raised
IMS-FR-027	List Notifications	Filter Notifications	The system shall allow users to filter the Notification list based on: • Status • Incident Category • Incident Classification (severity) • Location • Incident Occurred Date	Must	IMS Usability; Manual notification of incident or potential incident; Incident record search and retrieval	View Notification List; View Notifications Raised

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-028	List Notifications	Group Notifications	The system shall allow users to group Notifications within the list (e.g. by Category, location etc.)	Must	IMS Usability; Manual notification of incident or potential incident	View Notification List; View Notifications Raised
IMS-FR-029	List Notifications	Sort Notifications	The system shall allow users to sort Notifications within the list (e.g. by date, severity etc.)	Must	IMS Usability; Manual notification of incident or potential incident	View Notification List; View Notifications Raised
IMS-FR-030	List Notifications	Customise View Notification List	The system shall allow users to modify their personalised user preferences of the Notification List and save the settings. Includes: • Column display (width & order) • Grouping • Sorting	Should	Manual notification of incident or potential incident	View Notification List; View Notifications Raised
IMS-FR-031	List Notifications	Close Notification	The system shall allow users to close a Notification record without linking it to an Incident.	Must	Manual notification of incident or potential incident	Action Notification Record
IMS-FR-032	List Notifications	Record Closure Reason	The system shall allow users to record a free-text reason/justification for closing a Notification.	Must	Manual notification of incident or potential incident	Action Notification Record

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-033	List Notifications	Create Incident from Notification	The system shall allow users to create an Incident from a Notification record.	Must	Automated Incident record categorisation	Action Notification Record
IMS-FR-034	List Notifications	Copy Notification Details	The system shall pre-populate the Incident with all details of the Notification which are mapped to the Incident main data when it is used to create a new Incident [ref. Data Requirements]	Must	Automated Incident record categorisation	Action Notification Record
IMS-FR-035	List Notifications	Link Notification to Incident	The system shall link the Notification to the newly created Incident where it is used to create an Incident record.	Must	Manual incident creation	Action Notification Record
IMS-FR-036	List Notifications	Link Multiple Notifications to Incident	The system shall allow users to link multiple Notifications to an existing Incident.	Must	Manual incident creation	Action Notification Record
IMS-FR-235	List Notifications	Filter Incidents by Location	When linking a Notification to an Incident, the system shall filter the list of Incidents to those with the same Location as the Notification.	Could	Manual incident creation	Action Notification Record
IMS-FR-236	List Notifications	Filter Incidents by Date	When linking a Notification to an Incident, the system shall filter the list of Incidents to those with the same 'incident occurred on' date as the Notification.	Should	Manual incident creation	Action Notification Record
IMS-FR-037	List Notifications	Link Notification to Multiple Incidents	The system shall allow users to link a Notification to one or more existing Incidents.	Must	Manual incident creation	Action Notification Record
IMS-FR-038	List Notifications	View Linked Notifications	The system shall allow users to open and view the linked Notifications from an Incident record.	Must	Manual incident creation	Action Notification Record

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-039	List Notifications	Remove Link to Incident	The system shall allow users to remove the link between a Notification and an Incident.	Must	Manual incident creation	Action Notification Record
IMS-FR-219	List Notifications	Re-open Unlinked Notification	When user removes the last link from an Incident to a Notification the system shall prompt the user to optionally re-open the Notification from its Closed state.	Should	Incident Record Data Capture	Action Notification Record
IMS-FR-194	List Notifications	Notifications Raised by Reporter	The system shall allow Reporters to view a list of Notifications they have raised.	Must	Manual notification of incident or potential incident	View Notifications Raised
IMS-FR-195	List Notifications	Comments on Notifications	The system shall allow users to add comments to a submitted Notification record.	Must	Manual notification of incident or potential incident; Manual incident creation	Action Notification Record
IMS-FR-196	List Notifications	Re-open Closed Notifications	The system shall allow users to re-open Closed Notifications.	Must	Manual notification of incident or potential incident; Manual incident creation	Re-open Closed Incident
IMS-FR-040	Create Incidents	Manually Create Incidents	The system shall allow authorised users to manually create Incident records using pre-defined Incident Categories.	Must	Manual Incident record categorisation; Manual incident creation	Create New Incident

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-041	Create Incidents	Derive Incident Train Details	Where a Trip Number is entered against an Incident, the system shall automatically retrieve and populate the associated Run Number and Set Number.	Must	Manual incident creation	Create New Incident
IMS-FR-042	Create Incidents	Historical Incidents	The system shall allow users to enter an Incident date and time in the past.	Must	Manual incident creation	Create New Incident
IMS-FR-043	Create Incidents	Future-dated Incidents	The system shall prevent users from entering an Incident date and time in the future.	Must	Manual incident creation	Create New Incident
IMS-FR-044	Create Incidents	Multiple Incident Categories	The system shall allow recording of multiple categories per Incident.	Must	Manual Incident record categorisation; Manual incident creation	Create New Incident; Re-classify Incident Category
IMS-FR-045	Create Incidents	Incident Category Level	The system shall allow users to select an Incident Category at any category level (Level 1, Level 2 etc.). [ref incident categories]	Must	Manual Incident record categorisation; Manual incident creation	Create New Incident; Re-classify Incident Category
IMS-FR-046	Create Incidents	Category Specific Checklists	The system shall enable pre-defined checklists based on each category selected. [ref Appendix A - Incident Category matrix]	Must	Manual incident creation; Incident workflows automated task assignment; Incident workflow departure	Create New Incident

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-047	Create Incidents	Checklist Visibility	The system shall make Incident checklists within an Incident visible to user roles based on the Incident Category and Location selected for the Incident. [ref. Appendix B - Responsibility matrix]	Must	Manual incident creation; Incident workflows automated task assignment; Incident workflow departure	Create New Incident
IMS-FR-048	Create Incidents	Unique Incident Identifier	The system shall generate a unique identifier for each Incident created.	Must	Manual incident creation	Create New Incident
IMS-FR-201	Create Incidents	Cancel Create Incidents	The system shall allow users to cancel creating a draft Incident before saving.	Must	Manual incident creation	Close Incident Record
IMS-FR-215	Create Incidents	Location outside of Operational Boundary	The system shall allow users to record incident locations outside of the Sydney Trains operational boundaries (subject to definition of boundary).	Must	Incident Record Data Capture; Manual incident creation	Update Incident Main Details
IMS-FR-049	List Incidents	Incident Visibility	The system shall make Incidents visible to a user role based on the Incident Category and Location assigned to the Notification. [ref Appendix B - Responsibility matrix]	Must	IMS Safety; IMS Accessibility	View Incident List
IMS-FR-050	List Incidents	Open Incidents	The system shall display a list of all Open Incidents visible to the user role.	Must	IMS Usability; IMS Safety	View Incident List
IMS-FR-051	List Incidents	Closed Incidents	The system shall allow users to view Closed Incidents visible to their user role within the Incident list.	Must	IMS Usability; IMS Safety	View Incident List

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-052	List Incidents	Alert New Incidents	The system shall alert the user where a new Incident becomes visible to their user role.	Must	IMS Usability; IMS Safety	View Incident List
IMS-FR-053	List Incidents	Unread Incidents	The system shall highlight unread Incidents (per user) to the user within the Incident list.	Must	IMS Usability; IMS Safety	View Incident List
IMS-FR-054	List Incidents	Incident Read when Selected	The system shall declare an Incident as 'read' (per user) when it is selected from the list and opened to display its details.	Must	IMS Usability; IMS Safety	View Incident List
IMS-FR-056	List Incidents	Incident Classification	The system shall display the classification of Incidents to the user.	Must	Manual incident aggregation; Incident record data quality; Incident Record Data Capture; Manual Incident record categorisation	View Incident List
IMS-FR-057	List Incidents	Incident High Severity	The system shall highlight Incidents with a Severity >1 to the user within the Incident list.	Must	IMS Usability; IMS Safety	View Incident List
IMS-FR-058	List Incidents	Filter Incidents	The system shall allow users to filter the Incident list based on: • Status • Incident Category • Incident Classification (severity) • Location • Incident Occurred Date	Must	IMS Usability; Incident record search and retrieval	View Incident List
IMS-FR-059	List Incidents	Text Search Incidents	The system shall allow users to filter listed Incidents by free-text entry against displayed column values.	Must	Incident record search and retrieval	View Incident List

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-060	List Incidents	Incident Date Range Search	The system shall allow users to filter listed Incidents using date range parameters (to/from) against the date the Incident occurred.	Must	Incident record search and retrieval	View Incident List
IMS-FR-061	List Incidents	Filter by Type	The system shall allow users to filter Incidents by Incident Category.	Must	IMS Usability; Incident record search and retrieval	View Incident List
IMS-FR-062	List Incidents	Group Incidents	The system shall allow users to group Incidents within the list (e.g. by Category, location etc.)	Must	IMS Usability	View Incident List
IMS-FR-063	List Incidents	Sort Incidents	The system shall allow users to sort Incidents within the list (e.g. by date, severity etc.)	Must	IMS Usability; IMS Safety	View Incident List
IMS-FR-064	List Incidents	Filter by Sector	The system shall allow users to filter Incidents by Sector.	Must	IMS Usability; Incident record search and retrieval	View Incident List
IMS-FR-065	List Incidents	Group by Sector	The system shall allow users to group Incidents by Sector.	Must	IMS Usability; IMS Safety	View Incident List
IMS-FR-066	List Incidents	Customise View Incident List	The system shall allow users to modify their personalised user preferences of the Incident List and save the settings. Includes: • Column display • Filters • Grouping • Sorting	Must	IMS Usability; IMS Safety	View Incident List

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-227	List Incidents	Visually Highlight Status	The system shall visually highlight an Incident's status within the Incident List.	Must	Visual indicators of incident progress; Manual incident creation	View Incident List
IMS-FR-067	Manage Incidents	Incident Description Summary	The system shall allow users to record a free-text Description, summarising the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-068	Manage Incidents	Incident Commentary	The system shall allow users to record free-text, explanatory comments against an Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-069	Manage Incidents	Chronological Comments	The system shall display explanatory comments in descending chronological order (latest at top).	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-070	Manage Incidents	Comments Timestamped	The system shall automatically add a creation time/date stamp against all explanatory comments saved to the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-071	Manage Incidents	Display Comments Timestamp	The system shall display the creation time/date stamp with all explanatory comments recorded against an Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-072	Manage Incidents	Impacted Services	The system shall allow users to record details of initial delays (impacted services), including: • Trip number • Run number • Set number • Line and direction • Type of impact (No Delay, Started Short, Skipped in Running, Cancellation, Diverted, Stopped Short) • delay minutes	Must	Manually record incident response actions; Incident Record Data Capture; Link train timetable data manually to incident records	Update Incident Main Details
IMS-FR-234	Manage Incidents	Impacted Services (Consequential Delays)	The system shall allow users to record details of consequential delays (impacted services), including: • Trip number • Run number • Set number • Line and direction • Type of impact (No Delay, Started Short, Skipped in Running, Cancellation, Diverted, Stopped Short) • delay minutes	Must	Manually record incident response actions; Incident Record Data Capture; Link train timetable data manually to incident records	Update Incident Main Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-073	Manage Incidents	Estimated Recovery Time	The system shall allow users to enter an Estimated Recovery Time against an Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-074	Manage Incidents	External Reference Number	The system shall allow users to record one or more external reference numbers against an Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-075	Manage Incidents	Severity Escalation	The system shall allow users to raise the Severity of the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details; Escalate/De-escalate Incident
IMS-FR-076	Manage Incidents	Severity De-escalation	The system shall allow users to lower the Severity of the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details; Escalate/De-escalate Incident
IMS-FR-077	Manage Incidents	GIS View Incident Location	The system shall display the location of the incident on a geospatial view.	Should	Incident record map visualisation; Incident Record Data Capture	Update Incident Main Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-078	Manage Incidents	GIS View Access Point	The system shall display the location of infrastructure access points relevant to the incident location on a geospatial view.	Should	Incident record map visualisation; Incident Record Data Capture	Update Incident Main Details
IMS-FR-079	Manage Incidents	Ad-hoc Tasks	The system shall allow authorised users to manually add tasks to the Incident for actioning.	Must	Manual Incident task allocation; Incident Record Data Capture; Incident workflows manual task assignment	Action Incident Tasks
IMS-FR-080	Manage Incidents	Task Assignment	The system shall allow users to assign tasks to users for actioning.	Must	Manual Incident task allocation; Incident Record Data Capture; Incident workflows manual task assignment	Action Incident Tasks
IMS-FR-081	Manage Incidents	Task Receipt	The system shall allow users to acknowledge receipt of tasks within an incident.	Must	Manual Incident task allocation; Incident Record Data Capture; Incident workflows manual task assignment	Action Incident Tasks

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-082	Manage Incidents	Task Acknowledgement	The system shall allow users to acknowledge acceptance of tasks within an incident.	Must	Manual Incident task allocation; Incident Record Data Capture; Incident workflows manual task assignment	Action Incident Tasks
IMS-FR-083	Manage Incidents	Task Re-assignment	The system shall allow users to re-assign tasks they have assigned (to other users) for actioning.	Must	Manual Incident task allocation; Incident Record Data Capture; Incident workflows manual task assignment	Action Incident Tasks
IMS-FR-084	Manage Incidents	Task Rejection	The system shall allow users to reject tasks assigned to them for actioning.	Must	Manual Incident task allocation; Incident Record Data Capture; Incident workflows manual task assignment	Action Incident Tasks
IMS-FR-220	Manage Incidents	Task Rejection Reason	The system shall enforce users to enter a reason when rejecting a Task assigned to them.	Must	Manual Incident task allocation; Incident workflows manual task assignment	Action Incident Tasks

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-085	Manage Incidents	Task Cancellation	The system shall allow users to cancel tasks without completing them.	Must	Manual Incident task allocation; Incident Record Data Capture; Incident workflows manual task assignment	Action Incident Tasks
IMS-FR-086	Manage Incidents	Collaboration	The system shall allow multiple users to simultaneously update the same Incident record.	Must	Incident Record Data Capture	Update Incident Main Details
IMS-FR-087	Manage Incidents	Highlight Conflicts	The system shall indicate to the user where simultaneous updates have been made to the same piece of information within an Incident.	Must	Incident Record Data Capture; Simultaneous multi-user access / update of incident record	Update Incident Main Details
IMS-FR-088	Manage Incidents	Simultaneous Conflict Resolution	The system shall allow users to manage update conflicts by selecting the value to save: • Keep their own update • Keep the other user's update • Merge the two updates	Must	Incident Record Data Capture; Simultaneous multi-user access / update of incident record	Update Incident Main Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-089	Manage Incidents	Conflict Data Retention	The system shall retain all data values involved in a conflicting update within the audit trail.	Must	Incident Record Data Capture; Simultaneous multi-user access / update of incident record	Update Incident Main Details
IMS-FR-090	Manage Incidents	Reference Other Incidents	The system shall allow users to record a reference to another Incident (unique identifier) for the purposes of 'merging' duplicate or similar Incident records.	Must	Manual incident aggregation; Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-091	Manage Incidents	Incident-specific Supporting Documentation	The system shall filter supporting documentation available within an Incident to those specific to the Incident Location and Category.	Must	Manual incident response plan distribution; Incident Record Data Capture; Automated incident response plan distribution	View Incident-Related Supporting Documents; Update Incident Main Details
IMS-FR-092	Manage Incidents	Record Emergency Protection	The system shall allow users to enter the measures undertaken to establish emergency protection of the affected Incident site.	Must	Manually record incident response actions; Incident Record Data Capture	Update Emergency Protection

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-093	Manage Incidents	Record Staff Involved	The system shall allow users to enter the details of Sydney Trains staff involved in the Incident, including: • Name • Position • Functional Group • Mobile Phone Number • Function/role in Incident	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-094	Manage Incidents	Multiple Staff Involved	The system shall allow users to record details of multiple Sydney Trains staff members involved in the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-095	Manage Incidents	Record External Persons Involved	The system shall allow users to enter the details of non-Sydney Trains staff involved in the Incident, including: • Name • Position • Organisation • Mobile Phone Number • Function/role in Incident	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-096	Manage Incidents	Multiple Externals Involved	The system shall allow users to record details of multiple externals (non-Sydney Trains staff) involved in the Incident.	Must	Incident Record Data Capture	Update Incident Main Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-097	Manage Incidents	Fixed Asset	The system shall allow users to record the fixed asset(s) associated with the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Infrastructure Asset Details
IMS-FR-098	Manage Incidents	Infrastructure Fault Updates	The system shall allow users to record the updates of an infrastructure asset fault resolution.	Must	Manually record incident response actions; Incident Record Data Capture; Monitoring incident progress	Update Infrastructure Asset Details
IMS-FR-099	Manage Incidents	Infrastructure Faults - Multiple Updates	The system shall allow users to enter multiple infrastructure asset fault resolution update statuses, each consisting of Status, ETA & Comments fields.	Must	Manually record incident response actions; Incident Record Data Capture; Monitoring incident progress	Update Infrastructure Asset Details
IMS-FR-100	Manage Incidents	Fleet Asset	The system shall allow users to record the Train (Set Number, Car Number, Set Type) associated with the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Fleet Asset Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-101	Manage Incidents	Fleet Updates	The system shall allow users to record the updates of a fleet defect resolution.	Must	Manually record incident response actions; Incident Record Data Capture; Monitoring incident progress	Update Fleet Asset Details
IMS-FR-102	Manage Incidents	Fleet - Multiple Updates	The system shall allow users to enter multiple fleet defect resolution update statuses, each consisting of Status, ETA & Comments fields.	Must	Manually record incident response actions; Incident Record Data Capture	Update Fleet Asset Details
IMS-FR-103	Manage Incidents	Record Weather	The system shall allow users to record the details of adverse weather conditions affecting and/or causing the Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Incident Main Details
IMS-FR-104	Manage Incidents	Record Person Information	The system shall allow users to record personal information for people affected by an Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Person of Interest Details; Update Security Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-105	Manage Incidents	Employee Lookup	Where Employee ID is entered and validated, populate person details with stored values from ERP (First name, Surname, Gender, Address, Phone number).	Should	Incident Record Data Capture	Update Security Details
IMS-FR-106	Manage Incidents	Record Safeworking Area	The system shall allow users to record actions taken to establish a Safeworking Area.	Must	Manually record incident response actions; Incident Record Data Capture	Update Safe Working Area Details
IMS-FR-107	Manage Incidents	Record Attribution	The system shall allow users to record Attribution for an Incident.	Must	Manual Incident record attribution; Manually record incident response actions; Incident Record Data Capture	Update Incident Attribution Details
IMS-FR-108	Manage Incidents	Divide Attribution	The system shall allow users to divide Attribution between up to 5 responsible parties per Incident.	Must	Manual Incident record attribution; Manually record incident response actions; Incident Record Data Capture	Update Incident Attribution Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-109	Manage Incidents	Initial Attribution	The system shall automatically assign initial Attribution values to an Incident based on Incident Category and Incident Location. [ref Attribution matrix]	Must	Manually record incident response actions; Incident Record Data Capture; Automated Incident record attribution	Update Incident Attribution Details
IMS-FR-110	Manage Incidents	Manually Update Attribution	The system shall allow users to manually override the default Attribution value set by the system.	Must	Manual Incident record attribution; Manually record incident response actions; Incident Record Data Capture	Update Incident Attribution Details
IMS-FR-185	Manage Incidents	Notify of Attribution	The system shall notify the relevant group where the Attribution value for an incident is updated and assigned to a different group (to the default value).	Must	Incident Record Data Capture; Automated Incident record attribution	Update Incident Attribution Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-111	Manage Incidents	Record Attribution (A-set)	The system shall allow users to record Reliability Incident Attribution for Incidents involving A-sets.	Must	Manual Incident record attribution; Manually record incident response actions; Incident Record Data Capture	Update Reliability Incident Attribution Details
IMS-FR-112	Manage Incidents	Record Contractor Response (A-set)	The system shall provide the ability to automatically capture the attribution response sent by the external contracting party and record it against the Incident.	Must	Manually record incident response actions; Incident Record Data Capture; Automated Incident record attribution	Update Reliability Incident Attribution Details
IMS-FR-189	Manage Incidents	UIC Coding	The system shall automatically assign a UIC code to an Incident based on the Incident Category selected.	Must	Incident Record Data Capture	Update Incident Main Details
IMS-FR-190	Manage Incidents	Update UIC Code	The system shall allow users to manually update the default UIC code set by the system.	Must	Incident Record Data Capture	Update Incident Main Details
IMS-FR-113	Manage Incidents	Record Alternate Transport	The system shall allow users to record Alternate Transport arrangements organised for an Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Alternate Transport Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-114	Manage Incidents	Email Alternate Transport Details	The system shall allow users to email confirmation of the order details to the selected bus company.	Could	Incident Record Data Capture	Update Alternate Transport Details
IMS-FR-115	Manage Incidents	Record CCTV Location	The system shall allow users to record details of the CCTV footage retrieved for an Incident.	Must	Manually record incident response actions; Incident Record Data Capture; Incident record attachments	Update Retrieved CCTV Details
IMS-FR-116	Manage Incidents	Open CCTV Location	The system shall open the defined location when a link to recorded CCTV is selected from within an Incident Record.	Must	Incident Record Data Capture; Incident record attachments	Update Retrieved CCTV Details
IMS-FR-202	Manage Incidents	View Details of Incident	The system shall allow users to view the details of an Incident record.	Must	Incident Record Data Capture	View Incident Details
IMS-FR-205	Manage Incidents	Add Attachment	The system shall allow users to add a file attachment to an Incident.	Must	Incident Record Data Capture; Incident record attachments	Update Incident Main Details
IMS-FR-221	Manage Incidents	Remove Attachment	The system shall allow users to remove a file attachment from an Incident.	Must	Incident Record Data Capture; Incident record attachments	Update Incident Main Details
IMS-FR-223	Manage Incidents	Related Incidents – fixed asset	Where a fixed asset is defined for an Incident, the system shall display all historical incidents involving the selected asset.	Should	Incident reporting historically; Incident reporting in real-time	Update Incident Main Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-224	Manage Incidents	Related Incidents - Train	Where a train set is defined for an Incident, the system shall display all historical incidents involving the selected set.	Must	Incident reporting historically; Incident reporting in real-time	Update Fleet Asset Details
IMS-FR-206	Manage Incidents	Cannot Update Closed Incident	The system shall prevent users from updating an Incident when it has a Closed status.	Must	Incident Record Data Capture	Update Person of Interest Details; Update Incident Main Details; Update Fleet Asset Details; Update Security Details; Update Incident Attribution Details; Update Infrastructure Asset Details; Update Retrieved CCTV Details; Update Emergency Protection; Update Reliability Incident Attribution Details; Update Alternate Transport Details; Update Safe Working Area Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-207	Manage Incidents	Update in Correction Mode post Closure	The system shall allow users to update an Incident record in 'Correction Mode' after it has been Closed.	Must	Incident Record Data Capture	Update Incident Attribution Details; Update Reliability Incident Attribution Details
IMS-FR-209	Manage Incidents	Security Report	The system shall allow users to record the details of a Security Incident.	Must	Manually record incident response actions; Incident Record Data Capture	Update Security Details
IMS-FR-210	Manage Incidents	Update Incident Category	The system shall allow users to update the Incident Category recorded (i.e. update from Level 2 to Level 3 selection)	Must	Incident Record Data Capture; Manual Incident record categorisation; Incident workflow departure	Re-classify Incident Category
IMS-FR-211	Manage Incidents	Delete Incident Category	The system shall allow users to remove an Incident Category from an Incident.	Must	Incident Record Data Capture; Manual Incident record categorisation	Re-classify Incident Category
IMS-FR-212	Manage Incidents	List Tasks	The system shall allow users to view all tasks created for the Incident.	Must	Manual Incident task allocation; Incident workflows manual task assignment	Action Incident Tasks

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-213	Manage Incidents	Update Tasks	The system shall allow users to update tasks within an Incident.	Must	Manual Incident task allocation; Incident workflows manual task assignment	Action Incident Tasks
IMS-FR-218	Manage Incidents	Summary of Actions	The system shall display a summary of actions recorded against the Incident in descending chronological order.	Must	Incident Record Data Capture	View Incident Details
IMS-FR-226	Manage Incidents	Cancel Incident	The system shall allow users to cancel Incidents that have been created without enforcing mandatory data capture.	Must	Manual incident aggregation	Create New Incident
IMS-FR-230	Manage Incidents	Executive Summary	The system shall allow users to record an executive summary of the Incident.	Must	Incident Record Data Capture	Update Incident Main Details

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-233	Manage Incidents	Acknowledge Response	The system shall allow users to acknowledge they take responsibility to undertake appropriate action when Incident actions are made visible to their role.	Must	Incident Record Data Capture; IMS Safety	Update Incident Main Details; Update Fleet Asset Details; Update Security Details; Update Infrastructure Asset Details; Update Retrieved CCTV Details; Update Emergency Protection; Update Alternate Transport Details; Update Safe Working Area Details
IMS-FR-117	Communications	Contacts - Rostered Station Staff	The system shall populate contact lists with the following details of rostered station staff: • Name • Position • Mobile Phone Number • Landline Phone Number • Email Address	Must	Incident Record Data Capture; IMS Safety	Send Incident Communications; Receive Staff Roster Information from Staff Rostering System

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-118	Communications	Station Staff at Location	The system shall populate contact lists with station staff rostered for the Location recorded against the Incident.	Must	Incident Record Data Capture; IMS Safety	Send Incident Communications; Receive Staff Roster Information from Staff Rostering System
IMS-FR-119	Communications	Contacts - Rostered Train Crew	The system shall populate contact lists with the following details of rostered Train Crew: • Name • Position • Mobile Phone Number • Landline Phone Number • Email Address	Must	Incident Record Data Capture; IMS Safety	Send Incident Communications; Receive Train Crew Roster Information from Crew Rostering System
IMS-FR-120	Communications	Train Crew on Set	The system shall populate contact lists with details of Train Crew rostered on the selected set/run number recorded against the Incident.	Must	Incident Record Data Capture; IMS Safety	Send Incident Communications; Receive Train Crew Roster Information from Crew Rostering System
IMS-FR-121	Communications	Contacts - Incident Management Team	The system shall populate contact lists with details of the rostered IMT.	Must	Incident Record Data Capture; IMS Safety	Send Incident Communications

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-122	Communications	Send Email - Template	The system shall allow users to send pre-defined (templated) emails to Contacts using their stored email address.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-123	Communications	Send Email - Ad-hoc	The system shall allow users to send ad-hoc emails to Contacts using their stored email address.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-124	Communications	Send Email - Ad-hoc Recipient	The system shall allow users to manually enter an email address when sending ad-hoc or templated email communications.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-125	Communications	SMS - Template	The system shall allow users to send pre-defined (templated) SMS to Contacts using their stored mobile phone number.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-126	Communications	SMS - Ad-hoc	The system shall allow users to send ad-hoc SMS to Contacts using their stored mobile phone number.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-127	Communications	Send Email to Contact	The system shall allow users to send emails to a single contact.	Must	Automatically record incident response actions	Send Incident Communications

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-128	Communications	Send Email to Distribution List	The system shall allow users to send emails to pre-configured contacts distribution lists.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-129	Communications	Send SMS to Contact	The system shall allow users to send SMS to a single contact.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-130	Communications	Send SMS to Distribution List	The system shall allow users to send SMS to pre-configured contacts distribution lists.	Must	Automatically record incident response actions	Send Incident Communications
IMS-FR-131	Communications	Create SITREP	The system shall allow users to send SITREP email communications, including: • Incident Identifier • Incident Category • Severity • Location • Impacted line • Impacted Trip • Forecast ETA • Description	Must	Timely manual distribution of incident information	Send Incident Communications
IMS-FR-132	Communications	SITREP - Add Incident Details	The system shall allow users to include selected incident details in SITREP communications.	Must	Timely manual distribution of incident information	Send Incident Communications

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-133	Communications	SITREP - add free-text	The system shall allow users to add free-text annotation to the SITREP email.	Must	Timely manual distribution of incident information	Send Incident Communications
IMS-FR-134	Communications	SITREP - Link to Incident	The system shall include a link to the Incident in the email, which when selected will open the Incident record in the web portal (subject to login).	Must	Timely manual distribution of incident information	Send Incident Communications
IMS-FR-188	Communications	Stand-by Teams	The system shall populate contact lists with staff rostered on Stand-by.	Must	IMS Safety	Send Incident Communications
IMS-FR-231	Communications	Send Executive Summary	The system shall allow users to include the Executive Summary in Incident Communications.	Must	Timely manual distribution of incident information	Send Incident Communications
IMS-FR-135	Close Incidents	Closed Date	The system shall automatically populate the Incident Closed date when the Status of 'Closed' or 'Cancelled' is selected and saved.	Must	Incident Record Data Capture	Close Incident Record
IMS-FR-136	Close Incidents	Closed Date Read Only	The system shall prevent users from modifying the auto-populated Incident Closed date.	Must	Incident Record Data Capture	Close Incident Record
IMS-FR-137	Close Incidents	Closed Date Correcting Mode	Where Incident is opened in Correcting Mode, Incident Closed date is not updated.	Must	Incident Record Data Capture	Close Incident Record
IMS-FR-214	Close Incidents	Notify Reporter	The system shall send notification to all Reporters of linked Notifications when an Incident record is Closed.	Must	Incident Record Data Capture	Notify Reporter of Closed Incident
IMS-FR-216	Close Incidents	Lock Record	The system shall prevent updates to an Incident Record when it has been Closed.	Must	Incident Record Data Capture	Close Incident Record

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-222	Close Incidents	Validate Mandatory Information	The system shall enforce entry of all defined mandatory information for an Incident before it can be closed.	Must	Incident record data quality	Close Incident Record
IMS-FR-138	Reporting	Generate Incident Report - PDF	The system shall allow users to generate a report containing selected details recorded for an Incident in PDF format.	Must	Incident reporting in real-time	Generate Incident Report
IMS-FR-139	Reporting	Generate Incident Report - Excel	The system shall allow users to generate a report containing selected details recorded for an Incident in Excel format.	Must	Incident reporting in real-time	Generate Incident Report
IMS-FR-238	Reporting	Configure Report Content	The system shall allow users to configure the content of the generated report.	Should	Incident reporting in real-time	Generate Incident Report
IMS-FR-240	Reporting	Export to Excel	The system shall allow users to export incident lists to Excel.	Must	Incident reporting in real-time	Generate Incident Report
IMS-FR-140	Reporting	Print Incident Report	The system shall allow users to print selected details recorded for an Incident.	Must	Incident reporting in real-time	Generate Incident Report
IMS-FR-141	Reporting	Time & Date Generated	The system shall display the time and date generated on each page of all reports (header/footer).	Could	Incident reporting in real-time	Generate Incident Report
IMS-FR-217	Reporting	Watermark	The system shall add a watermark of the logged in username to all generated and printed report pages.	Must	Incident reporting in real-time	Generate Incident Report

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-237	Reporting	Configure Watermark	The system shall allow the application of report watermarks to be configurable by role.	Must	Incident reporting in real-time	Generate Incident Report
IMS-FR-142	Reporting	Ad-hoc Reports	The system shall allow users to create ad-hoc reports on the IMS database, in near-real time.	Must	Incident reporting in real-time	Generate Incident Report
IMS-FR-143	Reporting	Save Reports	The system shall allow users to save ad-hoc reports created against the IMS database for future re-use.	Must	Incident reporting in real-time	Generate Incident Report
IMS-FR-144	Reporting	Complex Analysis	The system shall allow users to perform complex data mining and analysis activities on IMS data in a Business Intelligence environment.	Must	Incident reporting historically	Send Incident Information to EDW and Incident Reporting System
IMS-FR-145	Reporting	Operational Dashboard	The system shall provide operational dashboards with near real-time Incident information.	Must	Operational incident dashboards; Incident reporting in real-time	Send Incident Information to EDW and Incident Reporting System

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-146	Reporting	Regulatory Compliance Reporting	The system shall fulfil regulatory reporting requirements.	Must	Incident reporting historically	Send Incident Information to EDW and Incident Reporting System
IMS-FR-147	System Administration	Load IMT Roster	The system shall allow users to record the details of the Incident Management Team roster.	Must	Employee contact and rostering data	Maintain Configuration Items
IMS-FR-148	System Administration	Maintain Distribution Lists	The system shall allow users to maintain (create, view, update, delete) contact distribution lists.	Must	Timely manual distribution of incident information; IMS Safety	Maintain Configuration Items
IMS-FR-149	System Administration	Update Rostering Data	The system shall allow users to manually update rostering data stored within the system.	Must	IMS Safety	Maintain Configuration Items
IMS-FR-150	System Administration	Update Contact Details	The system shall allow users to manually update contact details for Contacts stored within the system.	Must	IMS Safety	Maintain Configuration Items

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-151	System Administration	Configure Checklists	The system shall allow users to configure Incident Management check lists for each Incident Category.	Must	Incident workflows automated task assignment; Incident workflow departure	Maintain Configuration Items
IMS-FR-152	System Administration	Incident Routing	The system shall allow users to configure Incident Categories & Locations mapped to user roles for visibility of Incidents.	Must	IMS user profiles	Maintain Configuration Items
IMS-FR-153	System Administration	Checklist Permissions	The system shall allow users to define access permissions to check list items. [ref. permissions matrix]	Must	IMS user profiles; Incident workflows automated task assignment; Incident workflow departure	Maintain Configuration Items
IMS-FR-162	System Administration	Configuration Version Control	The system shall maintain version control of all configuration data.	Must	IMS Auditability; Audit trail of incident transactional data	Maintain Configuration Items

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-165	Integration	Asset Master Data	They system shall import the following asset master data from defined source systems: • Stations • Stabling Yards • Maintenance Depots • Level Crossings • Car parks • Properties/Buildings • Signals • Run Numbers • Trip Numbers • Set Numbers • Car Numbers • Lines • Line Direction	Must	IMS Safety; IMS supporting data	Receive Asset Information from Asset Management System
IMS-FR-166	Integration	Refresh Asset Master Data	The system shall refresh asset master data from source systems once every 24 hours.	Should	Incident reporting historically; IMS Safety	Receive Asset Information from Asset Management System
IMS-FR-167	Integration	Train Crew Roster Import	The system shall periodically import/refresh Train Crew rostering data every 'x' hours/minutes.	Must	Employee contact and rostering data	Receive Train Crew Roster Information from Crew Rostering System

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-168	Integration	Station Staff Roster Import	The system shall periodically import/refresh Station Staff rostering data every 'x' hours/minutes.	Must	Employee contact and rostering data	Receive Staff Roster Information from Staff Rostering System
IMS-FR-169	Security	Access to Incidents	The system shall restrict access to Incidents based on the permissions assigned to the user role. [ref permission matrix]	Must	IMS Security	IMS Login
IMS-FR-170	Security	IAM Authenticatio n	The system shall authenticate users against the Sydney Trains Identity Access Management system.	Must	IMS Security	IMS Login
IMS-FR-171	Security	Same Sign On	The system shall prompt users to authenticate using same sign on with their Sydney Trains credentials.	Must	IMS Security	IMS Login
IMS-FR-172	Security	User Authorisation	The system shall restrict access to information within an Incident based on the permissions assigned to their user role [ref. permission matrix].	Must	IMS Security	IMS Login
IMS-FR-197	Security	Password Expired	The system shall detect when a user's password has expired and force a password change.	Must	IMS Security	IMS Login
IMS-FR-198	Security	Prevent Access - Not Authorised	The system shall prevent access where the user is not authorised to access the system.	Must	IMS Security	IMS Login
IMS-FR-199	Security	Prevent Access - Not Authenticate d	The system shall prevent access where the user is not authenticated.	Must	IMS Security	IMS Login
IMS-FR-203	Security	Prevent Access to Incident Details	The system shall restrict user's access to details within an Incident, based on user role permissions.	Must	IMS Security	IMS Login

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-204	Security	Restrict to Read Only	The system shall restrict user's access to read only for details within an Incident, based on user role permissions.	Must	IMS Security	Update Person of Interest Details; Update Incident Main Details; Update Fleet Asset Details; Update Security Details; Update Incident Attribution Details; Update Infrastructure Asset Details; Update Retrieved CCTV Details; Update Emergency Protection; Update Reliability Incident Attribution Details; IMS Login; Update Alternate Transport Details; Update Safe Working Area Details
IMS-FR-239	Security	Restrict Reporting Output	The system shall restrict reporting output by user role.	Must	Incident reporting in real-time	Generate Incident Report

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-173	Integration	Safety Export	The system shall periodically send Safety and Environment Incidents to SKMS at configurable intervals (e.g. every 1 hour).	Must	Incident reporting historically	Send Safety and Environment Incidents to SKMS
IMS-FR-174	Integration	Security Export	The system shall export Security Incidents to Intelligence Management and Reporting System.	Must	Incident reporting historically	Send Security Incidents to Intelligence Analysis and Reporting System
IMS-FR-175	Integration	Waratah Export	The system shall Send All Waratah Incidents Information to PPP Co.	Must	Incident reporting historically	Send Incident Information to PPP Co.
IMS-FR-176	Integration	Waratah Supporting Import	The system shall Receive Incident Supporting Information from PPP Co.	Must	Incident reporting historically	Receive Incident Supporting Information from PPP Co.
IMS-FR-177	Integration	Finalised Incident Export	The system shall export/send all Finalised Incidents to Calculation Engine.	Must	Incident reporting historically	Send Finalised Incident Information to Calculation Engine
IMS-FR-178	Integration	PMS Export	The system shall periodically Export/Send Incident Details to Waratah PMS at configurable intervals.	Must	Incident reporting historically	Send Finalised Incident Information to Performance Management System

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-179	Integration	Train Crew Export	The system shall periodically Send Train Crewing Incidents to Train Crew Reporting System	Must	Incident reporting historically	Send Train Crewing Incidents to Train Crewing Analysis and Reporting System
IMS-FR-180	Integration	Delay Information	The system shall create a Notification from Delay Information received from the Train Location Monitoring System.	Must	Incident reporting historically	Receive Delay Information from Train Location Monitoring System
IMS-FR-181	Integration	Incident List to TLS-OTR	The system shall send Incident details to TLS-OTR for a specified delay.	Must	Incident reporting historically	Send Incident Details to Train Location Monitoring System
IMS-FR-182	Integration	Fault List Import	The system shall receive Waratah fault information from Fault Management System.	Must	Incident reporting historically	Receive Open Fault Information from Fault Management System
IMS-FR-183	Integration	Fleet Incident Export	The system shall export/send fleet incidents to Fault Management System.	Must	Incident reporting historically	Send Fleet Related Incidents to Fault Management System

Req ID	Category	Name	Description	Priority	Trace to HLTBR	Trace to Use Case
IMS-FR-184	Integration	Reporting/EDW Export	The system shall Send Incident Details to EDW	Must	Incident reporting historically	Send Incident Information to EDW and Incident Reporting System
IMS-FR-225	Integration	Publish to Third Party	The system shall publish a standard Incident message enabling consumption by third parties.	Must	Incident reporting historically; IMS Accessibility 3rd Parties; IMS Safety; Incident reporting in real-time	Publish to 3rd Party Consumers
IMS-FR-232	Integration	Send Incidents to Force Majeure Application	The system shall send Incident details to the Force Majeure Application.	Should	Incident reporting historically	Send Incident Impacted by Force Majeure to FM Application

4.2 Non Functional Requirements

Requirement ID	Category	Name	Description	Priority	Trace to HLTBR
IMS-NFR-ADA-001	Adaptability	Scalability of user base	The system shall be scalable to accept an increase in user base by 10% per year.	Must	IMS Performance
IMS-NFR-ADA-002	Adaptability	Scalability of Incidents	The system shall be scalable to accept an increase of Incidents by 10% per year.	Must	IMS Performance
IMS-NFR-AUD-001	Auditability	Audit Trail	The system shall provide the ability to audit and log events that occurred in the system.	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-AUD-002	Auditability	Tailoring of Audit Trail	The system shall provide the ability to tailor audit requirements by component. The audit logs shall contain at a minimum the following; • security relevant information: identification and authentication of users • date and time that the event occurred and was recorded source system • device or application information, e.g. IP address, application, or assigned name • type of action, for example include authorise, create, read, update, delete • before and after values when action involves updating a data element • any status, response or errors values generated as a result of the event or activity.	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-AUD-004	Auditability	Audit Trail Classification	The system shall ensure audit logs are easily identified and retrievable by authorised users.	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-AUD-005	Auditability	Record of Audit Trail Access	The system shall record all access/export of audit logs.	Must	Audit trail of incident transactional

					data; IMS Auditability
IMS-NFR-AUD-006	Auditability	Audit - user actions	The system shall record all create and update actions in the audit trail capturing: • logged in user id • logged in user name • logged in user role • action taken • field modified • timestamp of action	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-AUD-007	Auditability	Audit - user access	The system shall record all system logon and logoff actions, capturing: • user id • user name • user role • timestamp of action • Client used to access	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-AUD-008	Auditability	Audit - Outbound Communications	The system shall capture all outbound communications in the audit trail, including: • user id (of sender) • user name (of sender) • user role (of sender) • timestamp of action • medium used for communication • content of communication • recipients of communication	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-AUD-009	Auditability	Audit - Secured	The system shall restrict access to the audit log to authorised personnel only.	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-AUD-010	Auditability	Audit Trail - Performance	The system shall have the ability to not impact system performance while auditing and monitoring of usage.	Must	Audit trail of incident transactional data; IMS Auditability
IMS-NFR-	Availability	System Availability	The system shall be available for use 7 days per week, 24 hours a	Must	IMS Availability

AVA-001		Timeframe	day.		
IMS-NFR-AVA-003	Availability	Same User Experience regardless of location	The system shall ensure a consistent user experience for functionality regardless of location accessing the application from.	Should	IMS Availability
IMS-NFR-AVA-004	Availability	Connectivity	Connectivity to the system shall be limited to clients on the Sydney Trains ICT Network	Must	IMS Accessibility 3rd Parties; IMS Security
IMS-NFR-AVA-005	Availability	Planned Maintenance	The system shall only be taken offline for planned maintenance activities only between the hours of 00:00 to 05:00 Sunday – Tuesday after business approval has been provided.	Must	IMS Reliability; IMS Availability
IMS-NFR-AVA-007	Availability	Maximum Acceptable Outage	The system shall have a Maximum Acceptable Outage (MAO) time of 6-8 hours above the RTO in line with Sydney Trains' Business Critical systems.	Must	IMS Business Continuity; IMS Reliability; IMS Availability
IMS-NFR-AVA-008	Availability	Planned Maintenance Frequency	The system shall be unavailable for no more than 4 planned outages per year with a frequency of no less than 3 months between planned outages.	Must	IMS Reliability; IMS Availability
IMS-NFR-AVA-009	Availability	Offline Caching	The system shall allow caching of data when network connectivity is lost which is automatically synchronised when connectivity is restored.	Should	IMS Business Continuity; IMS Availability
IMS-NFR-AVA-010	Availability	Data Retention	Data shall be retained in the system and made accessible online (to be viewed, searchable and reported on for a minimum period of 10 years from creation.	Must	IMS Auditability; IMS Capacity; IMS Security
IMS-NFR-CAP-002	Capacity	Support of Concurrent Users - Write	The system shall support, at a minimum, 200 concurrent users with write access.	Must	IMS Performance
IMS-NFR-CAP-003	Capacity	Scalability of hardware	The system shall be designed so that additional hardware resources can be added to facilitate future increased workloads.	Must	IMS Performance
IMS-NFR-CAP-004	Capacity	Total Users – Write	The system shall support a minimum of 1000 users with write access.	Must	IMS Performance
IMS-NFR-CAP-005	Capacity	Total Users – Read	The system shall support a minimum of 3500 users with read-only access.	Must	IMS Performance
IMS-NFR-CAP-006	Capacity	Total Users – Report	The system shall support a minimum of 3000 users with capability to report Notifications.	Must	IMS Mobility; IMS Performance

IMS-NFR-CAP-007	Capacity	Support of Concurrent Users - Read	The system shall support, at a minimum, 500 concurrent users with read access.	Must	IMS Performance
IMS-NFR-CAP-008	Capacity	Support of Concurrent Users - Report	The system shall support, at a minimum, 500 concurrent users with capability to report Notifications.	Must	IMS Mobility; IMS Performance
IMS-NFR-CAP-009	Capacity	Estimated Records	The system shall support an estimated 150,000 incident records in the first year.	Must	IMS Capacity
IMS-NFR-CON-001	Confidentiality	Storage of sensitive information in Audit Trail	The system shall be designed and implemented to minimise the recording of sensitive or personal user identification information in logs and audit trails unless such detail is necessary for specific business or operational reasons.	Should	IMS Auditability
IMS-NFR-INT-001	Interoperability	Management of Data Exchange	The system shall provide monitoring of data exchange between upstream and downstream systems.	Should	IMS Reliability
IMS-NFR-INT-002	Interoperability	Transport Data Interchange Standards	The system shall support the SIRI (v1.4) transport data interchange standard. Transmodel has been selected as the standard to adopt for data as a reference standard.	Must	IMS Interoperability
IMS-NFR-INT-003	Interoperability	Support of Common Architecture Patterns	The system shall support common architecture patterns relating to SOA (Service Orientated Architecture) and ETL (Extract Transform and Load) due to the coupling of business processes relating to Incident management, timetable management and user communication management.	Must	IMS Interoperability
IMS-NFR-INT-004	Interoperability	Support of Email Systems and Protocols	The system shall support interfacing with (outbound) email systems supporting Simple Mail Transfer Protocol (SMTP).	Must	IMS Interoperability
IMS-NFR-INT-006	Interoperability	Remote Desktop access to application	The system shall provide full access to the application via the Sydney Trains remote desktop client.	Must	IMS Interoperability
IMS-NFR-INT-007	Interoperability	Browser Compatibility	The system shall be compatible with the following browsers: • Internet Explorer [8 (current), IE11+/Microsoft Spartan (future)] • Safari • Chrome.	Must	IMS Interoperability
IMS-NFR-INT-008	Interoperability	Management of Data Exchange Failure – notification	The system shall send a notification to the appropriate support teams and business owners for failure of a data exchange job. This shall include details of the failed data exchange as well as when it occurred.	Should	IMS Reliability
IMS-NFR-	Interoperability	Management of Data	The system shall provide the ability to re-initiate data exchange	Should	IMS Reliability

INT-009		Exchange Failure – re-initiate job	after a failed job has been restarted.		
IMS-NFR-INT-010	Interoperability	Supported Devices	The system shall be available for use on; • Sydney Trains SOE current (Windows 7) next SOE Windows 10 • Tablet Devices (iPad) • Phone Devices (iPhone)	Must	IMS Interoperability
IMS-NFR-LER-001	User Error Protection	Error Protection	The system shall be intuitive to enhance usability and allow end users to input correct data through the use of: • Auto-populating data • Drop down selections • Mandatory fields	Should	IMS Usability
IMS-NFR-LER-002	Learnability	Context Sensitive Help	The system shall provide context-sensitive, searchable help for users on all functions.	Should	IMS Usability
IMS-NFR-OPR-001	Operability	Time to Create Incident	The system shall enable incidents to be created with minimal mandatory information in no more than 30 seconds, 95% of the time.	Must	IMS Usability
IMS-NFR-REC-001	Recoverability	Recovery Time Objective	The intended solution shall have a Recovery Time Objective (RTO) of 4-24 hours in line with Sydney Trains' Business Critical systems.	Must	IMS Business Continuity; IMS Reliability; IMS Availability
IMS-NFR-REC-002	Recoverability	Data Loss	The system shall have a zero data loss when restored from a service interruption. This shall be limited to data that has been submitted to the application from a user and/ or an external system and not include data that is active on a user's screen or device that has not been submitted.	Must	IMS Business Continuity; IMS Reliability; IMS Availability
IMS-NFR-RES-001	Response Time	Response Time	The system shall have a maximum response time of two seconds for end-user transactions 95% of the time. This excludes any data extract or report generation.	Must	IMS Performance
IMS-NFR-SEC-001	Security	Session Timeout	The system shall ensure user sessions remain open until the period of inactivity reaches the pre-configured timeout period.	Should	IMS Security
IMS-NFR-SEC-002	Security	Configurable Session Timeout	The system shall allow a configurable session timeout period to be set.	Should	IMS Security
IMS-NFR-SEC-003	Security	Unauthorised Access	The system shall prevent unauthorised access to the system.	Must	IMS Security

IMS-NFR-SEC-004	Security	System Communication	The system shall encrypt all data traversing network zones.	Must	IMS Security
IMS-NFR-SUP-001	Supportability	Ability to Roll back after Upgrade	The system shall provide the ability to revert to a previous release after a system release upgrade.	Should	IMS Reliability
IMS-NFR-SUP-002	Supportability	Logging of System Failures	The system shall log technical details of all errors for support teams to interrogate.	Should	IMS Reliability; IMS Auditability
IMS-NFR-USE-001	Useability	Configure Pop-ups	The system shall allow individual users to configure pop-up alerts related to Notifications/Incidents.	Must	IMS Usability
IMS-NFR-USE-002	Useability	Spell check	The system shall provide a spell check function for all free-text fields.	Should	IMS Usability
IMS-NFR-USE-003	Useability	Rich-Text Editor	The system shall allow users to mark up free-text entry fields with text formatting options (Font colour, Bold, Italics, Underline, Bullets and Numbering).	Should	IMS Usability
IMS-NFR-USE-004	Useability	Time Format	The system shall display all times using 24-hour format (e.g. 14:56)	Must	IMS Usability
IMS-NFR-USE-005	Useability	Date Format	The system shall display all dates using the format DD-MMM-YYYY (e.g. 24-JUN-2015)	Should	IMS Usability

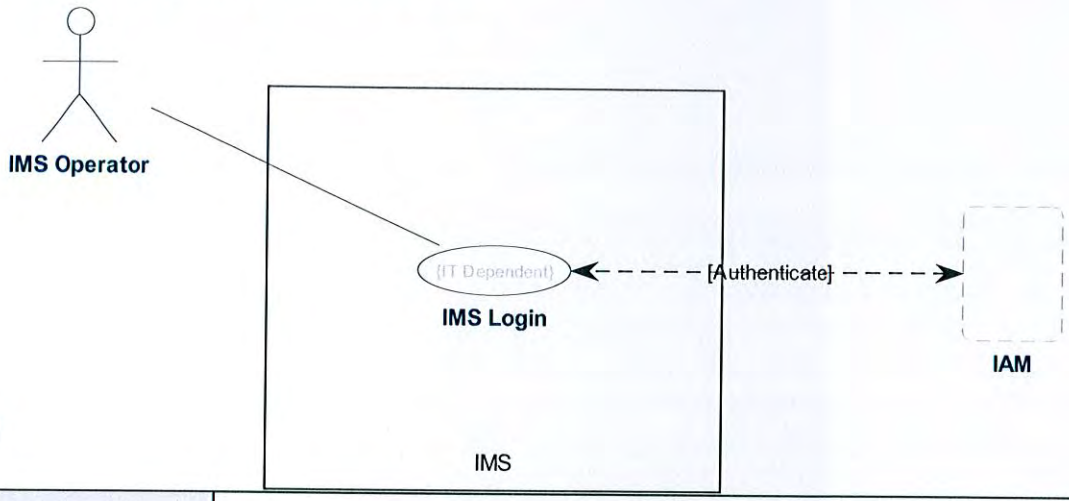
5. Use Cases

5.1 Actor Summary

Role Name	Description
Attribution Manager	A user authorised to update Attribution values against Incidents. Does not include external (A-set) attribution.
Communications Manager	A user authorised to create and send Incident communications from the system.
Email	The email messaging service in Sydney Trains. System actor.
External Attribution Manager	A user authorised to update Attribution values for A-set related Incidents.
IAM	The system used to authenticate user credentials. System actor.
IMS	The Incident Management System end-to-end solution. System actor.
IMS Operator	Any user attempting to access the IMS.
Incident Creator	A user authorised to create Incident records.
Incident Investigator	A user authorised to manage actions within an Incident, reporting to the Incident Manager.
Incident Manager	A user authorised to perform most actions in the system related to managing the Incident record.
Incident Viewer	A user authorised to view Incident details, but not update them.
Notification Manager	A user authorised to manage Notification records created by Reporters.
Report Generator	A user authorised to generate & print reports from the system.
Reporter	A user authorised to create Notifications by way of a NIN or Delay Report.
SMS	The SMS service in Sydney Trains. System actor.
System Administrator	A user authorised to maintain the system's configuration items.
Task Assignee	A user assigned an Incident Task.
Task Manager	A user authorised to create & assign Tasks.

5.2 Login

5.2.1 Use Case Specification



Aliases	
Description	An IMS operator runs the application and enters their user credentials for validation.
UID	IMS-UC-001
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	IAM, IMS Operator
Precondition	1. User has Sydney Trains user account. 2. User has connection to Sydney Trains network. 3. User has user account defined in the IMS.
Postcondition	User is authenticated and authorised to access the IMS.
Questions/Notes	

Normal Course of Events	1. User opens the IMS. 2. System displays Login screen. 3. User enters user credentials: o User Id o Password 4. System authenticates user and authorises access based on the privileges attached to the user's role, navigating user to the Incident Overview screen.

	5. Exit Use Case.
Alternate Course of Events	**Multiple Roles** 3.1.1 User has multiple roles assigned and selects a Role from the dropdown list. 3.1.2. Return to normal course 3. **Password Expired** 4.1.1 System prompts user to change password as it has expired. 4.1.2. User enters new password details and validates. 4.1.3 Return to normal course 4. **User not authenticated** 4.2.1. User credentials entered are not authenticated, system returns error message. 4.2.2. Exit Use Case. **User not authorised** 4.3.1 User is authenticated however is unauthorised to access application, system displays error message, "User not authorised". 4.3.2. Exit Use Case.

Diagrams	Login
Links to Other	
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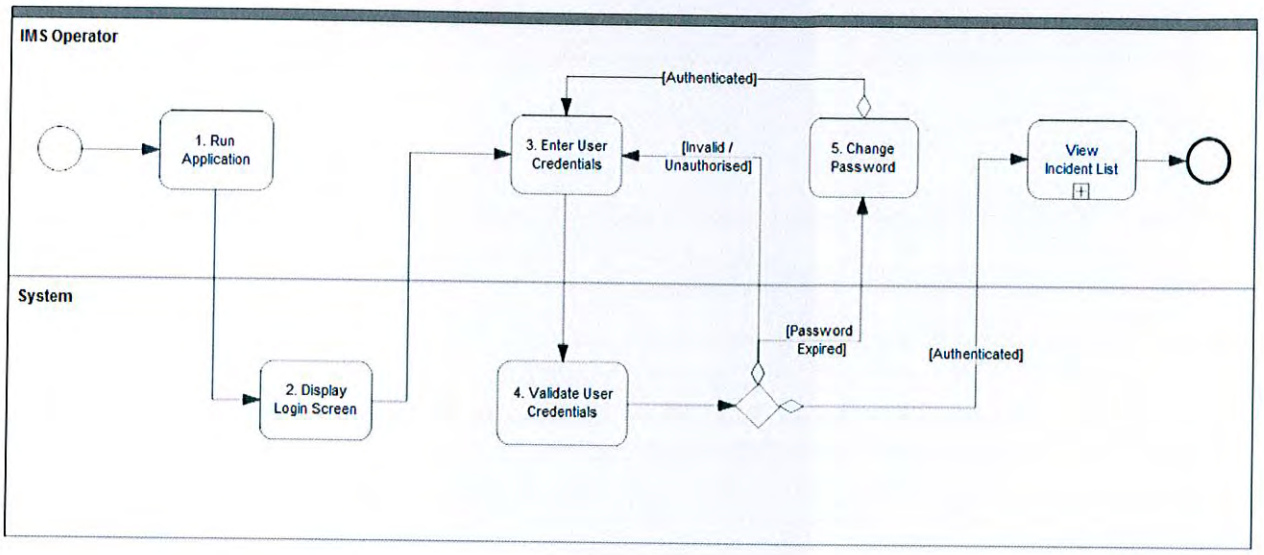
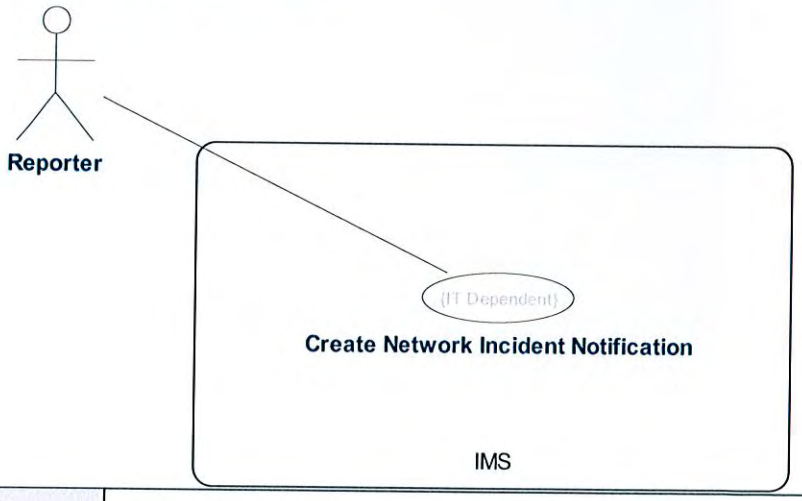
5.2.2 System Process Diagram



5.3 Create Notification

5.3.1 Use Case Specification



Aliases	
Description	Reporter creates a Notification record and submits it for investigation/management (if required).
UID	IMS-UC-002
Abstract/Partial	false
Decision Point	false
Inherits	

Actors	
Precondition	User has permissions to log Notification in IMS.
Postcondition	Details of potential incident are logged in IMS.
Questions/Notes	

Normal Course of Events	1. User selects to create a new Notification. 2. System displays the new Notification form. 3. User enters details of event/potential incident and submits the form. 4. System saves the newly created record and displays successful confirmation message including the unique notification identifier. 5. Exit Use Case.
Alternate Course of Events	Cancel Create Notification 3.1.1. User selects to Cancel creating the new Notification. 3.1.2. System closes the new Notification form and discards changes. Add Image 3.2.1. User uploads an image to the Notification 3.2.2. Return to normal course 3. Add Video 3.3.1. User uploads a video to the Notification 3.3.2. Return to normal course 3. Data Validation Failed 4.1.1. User enters invalid data and submits the form. 4.12. System displays error message and highlights field in error. 4.1.3. Return to normal course 3. Mandatory Information 4.2.1. Mandatory information is not completed, System displays error message, and highlights field(s) in error. 4.2.2. Return to normal course 3.

Diagrams	
Links to Other	

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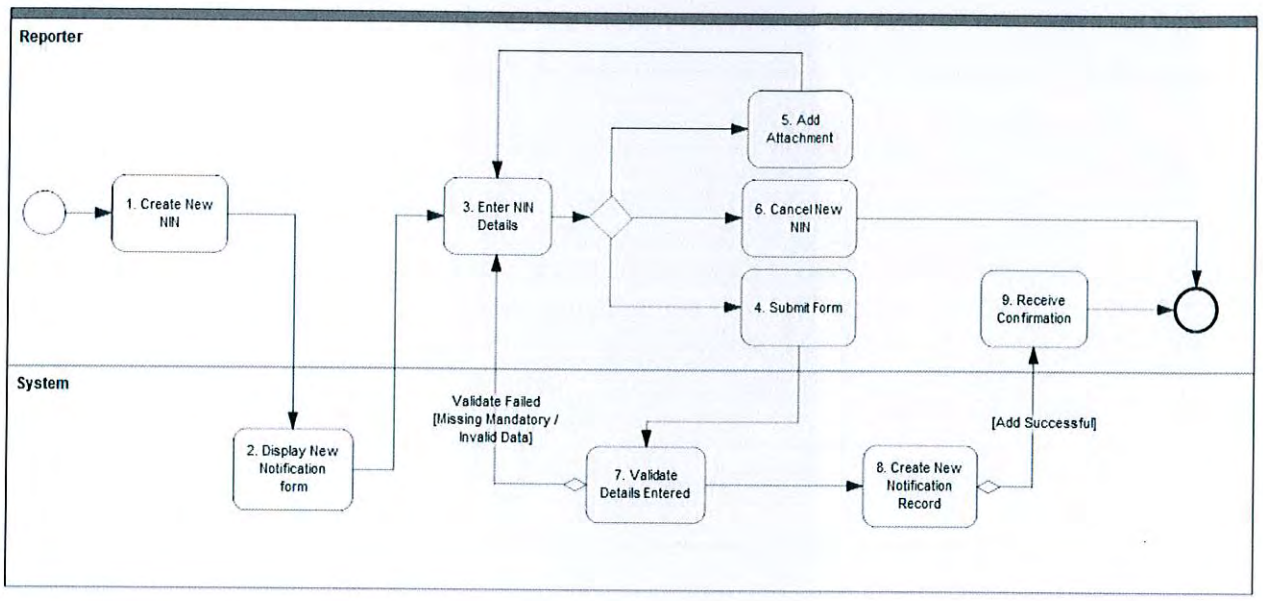
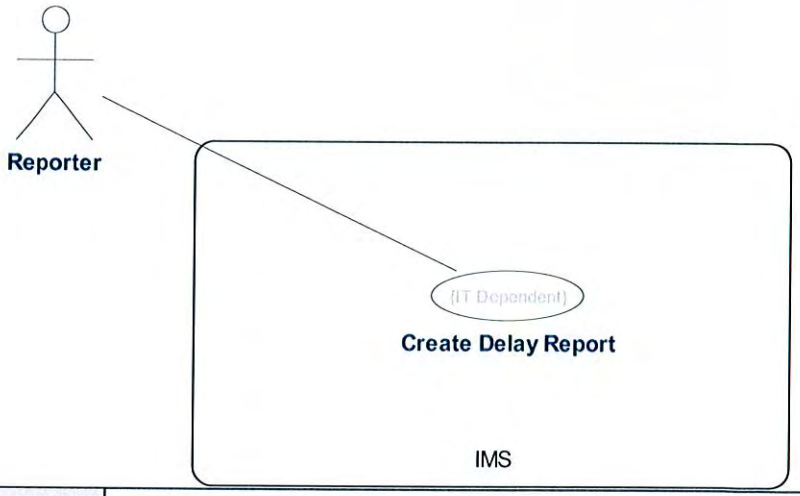
5.3.2 System Process Diagram



5.4 Create Delay Report

5.4.1 Use Case Specification



Aliases	
Description	Reporter creates a Delay Report record and submits it for investigation/management (if required).
UID	IMS-UC-003

Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	User has permissions to log Notification in IMS.
Postcondition	Details of potential incident are logged in IMS.
Questions/Notes	

Normal Course of Events	1. User selects to create a new Delay Report. 2. System displays the New Notification form. 3. User enters details of event/potential incident and submits the form. 4. System saves the newly created record and displays successful confirmation. 5. Exit Use Case.
Alternate Course of Events	Cancel Create Notification 3.1.1. User selects to Cancel creating the new Notification. 3.1.2. System closes the new Notification form and discards changes. Data Validation Failed 4.1.1. User enters invalid data and submits the form. 4.1.2. System displays error message and highlights field in error. 4.1.3. Return to normal course 3. Mandatory Information 4.2.1. Mandatory information is not completed, System displays error message, and highlights field(s) in error. 4.2.2. Return to normal course 3.

Diagrams	
Links to Other	
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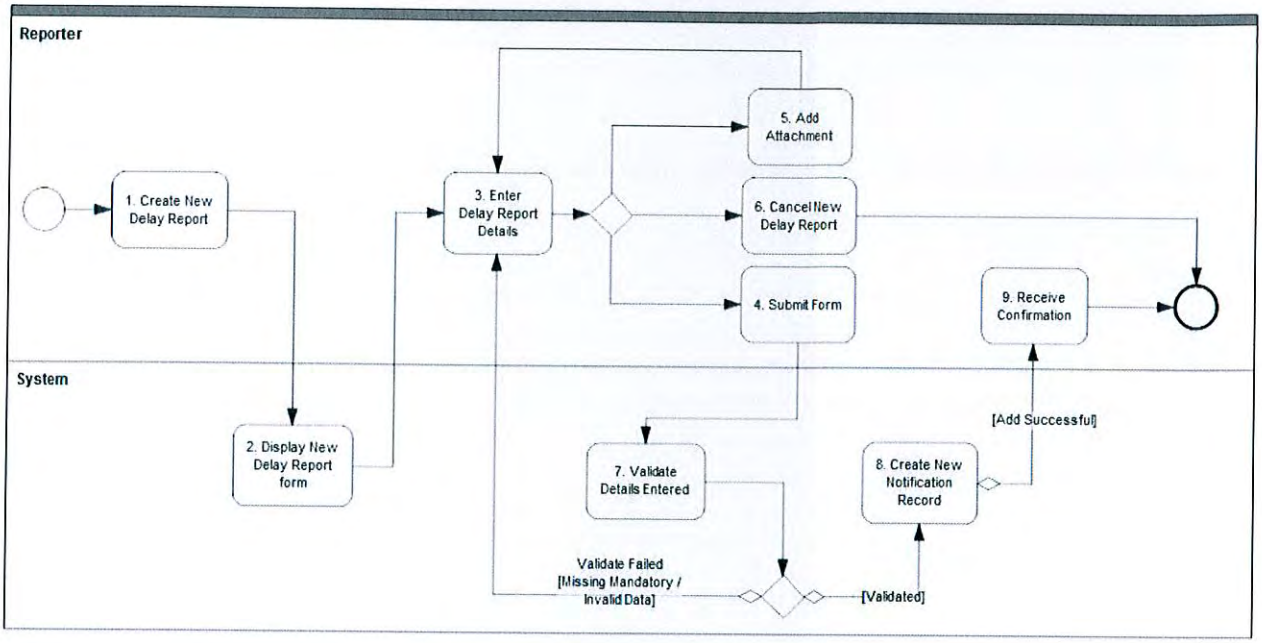
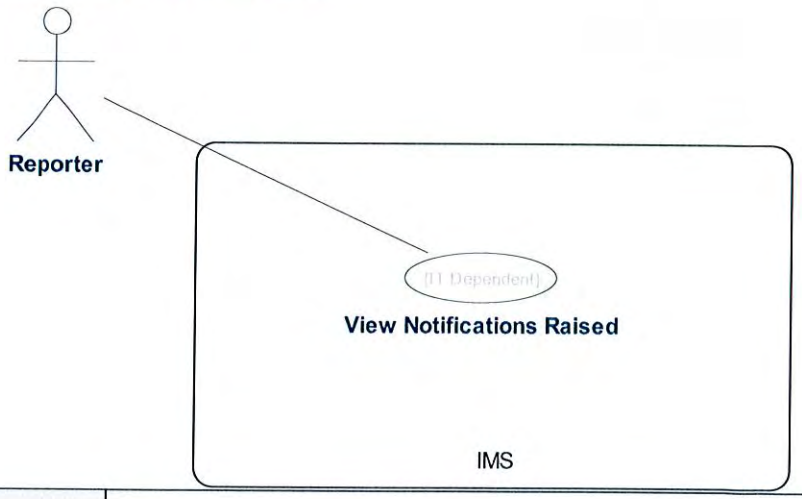
5.4.2 System Process Diagram



5.5 View Notifications Raised

5.5.1 Use Case Specification



Aliases	
Description	A Reporter views the list of Notifications they have reported.
UID	IMS-UC-004
Abstract/Partial	false

Decision Point	false
Inherits	
Actors	
Precondition	Reporter has raised one or more Notification records.
Postcondition	List of Notifications raised by the user are displayed.
Questions/Notes	

Normal Course of Events	1. User selects to view list of Notifications they have raised. 2. System displays Notifications raised by logged in user. 3. Exit Use Case.
Alternate Course of Events	No Notification Records 2.1.1. System returns no Notification records based on filter setting and displays message, "No Notifications found". 2.1.2. Exit UC. Filter Records 3.1.1. User applies a filter to the Notification List. 3.1.2. System applies filter criteria and displays matching results in the Notification List. 3.1.3. Return to normal course 2. Search Records 3.2.1. User enters search criteria: • date range (date from & date to) • free text and selects to Search. 3.2.2. System applies search parameters and displays all matching Notification records. 3.2.3. Return to normal course 3. Sort Records 3.1.1. User applies a sort order (ascending/descending) to the Notification List. 3.1.2. System applies sort order to the results displayed in the Notification List. 3.1.3. Return to normal course 2.

Diagrams	
Links to Other	
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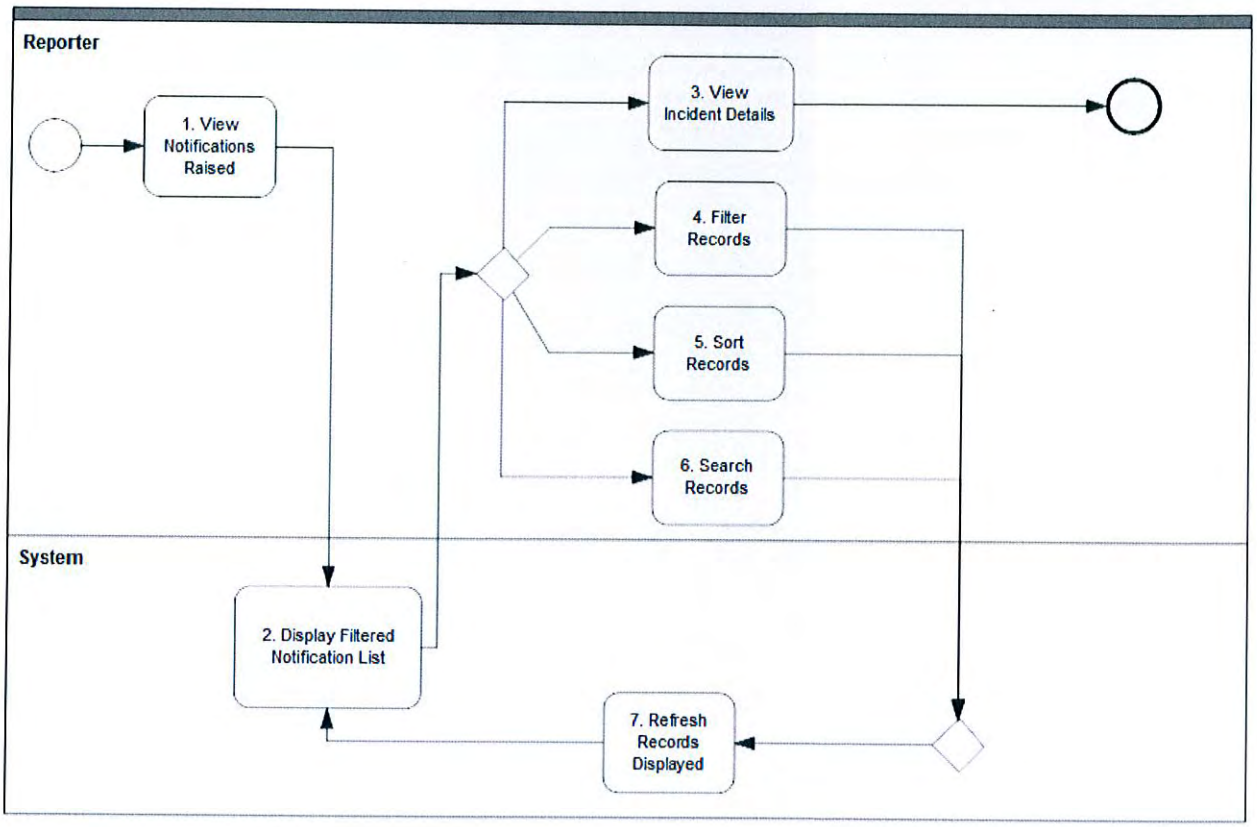
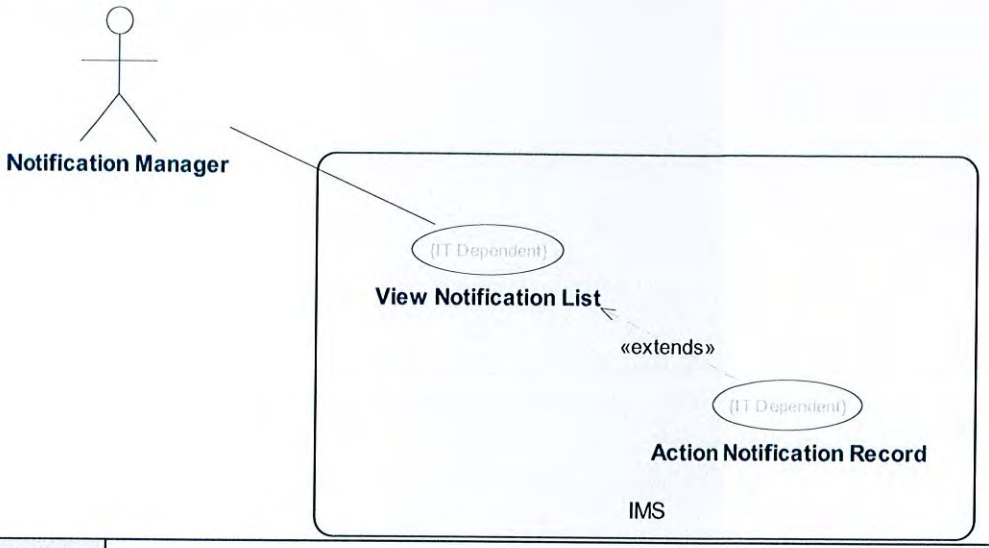
5.5.2 System Process Diagram



5.6 View Notification List

5.6.1 Use Case Specification



Aliases	
Description	Notification Manager views the list of Notifications visible to their role.
UID	IMS-UC-005
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Notification records exist.
Postcondition	Notifications are displayed to the user based on pre-configured filter settings.
Questions/Notes	

Normal Course of Events	1. User selects to view list of Notifications. 2. System lists Notifications to the user, displaying the following: • Open Notifications visible to the logged in user/role. • List field & column settings based on default setting or user's saved configuration. 3. User selects a Notification record from the list.

	4. System displays the details of the selected Notification (include Action Notification Record). 5. Exit UC
Alternate Course of Events	No Notification Records 2.1.1. System returns no Notification records based on filter setting and displays message, "No Notifications found". 2.1.2. Exit UC. Filter Records 3.1.1. User applies a filter to the Notification List. 3.1.2. System applies filter criteria and displays matching results in the Notification List. 3.1.3. Return to normal course 2. Search Records 3.2.1. User enters search criteria: • date range (date from & date to) • free text and selects to Search. 3.3.2. System applies search parameters and displays all matching Notification records. 3.3.3. Return to normal course 3. Sort Records 3.4.1. User applies a sort order (ascending/descending) to the Notification List. 3.4.2. System applies sort order to the results displayed in the Notification List. 3.4.3. Return to normal course 2. View Closed Records 3.5.1. User selects to view Closed Notifications. 3.5.2. System lists Closed Notifications visible to the logged in user/role 3.5.3. Return to normal course 3. Group Records 3.6.1. User selects to group Notifications in the list. 3.6.2. System groups Notifications listed by the value selected. 3.6.3. Return to normal course 3.

Diagrams	
Links to Other	

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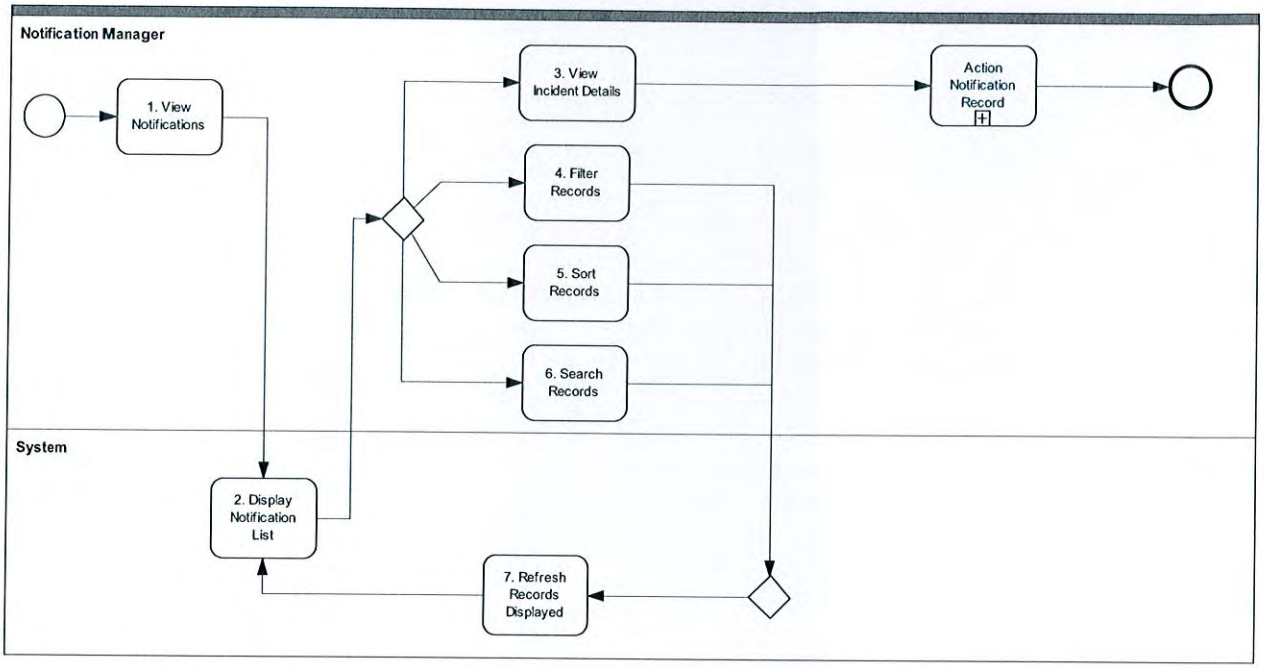
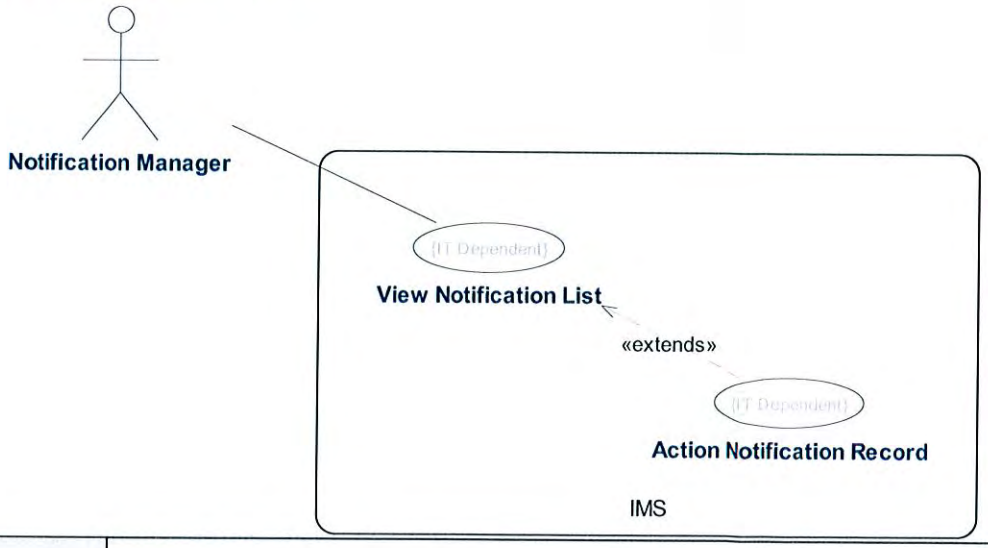
5.6.2 System Process Diagram



5.7 Action Notification Record

5.7.1 Use Case Specification



Aliases	
Description	A user actions a Notification record by either:

	Creating an Incident from the Notification Linking the Notification to an existing Incident
UID	IMS-UC-006
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Notification exists. Notification is selected in Notification List
Postcondition	Notification has been closed and status is updated.
Questions/Notes	

Normal Course of Events	1. User reviews the Notification details and selects to create a New Incident. 2. System creates new Incident based on Notification details (include UC: Create New Incident). 3. Exit UC.
Alternate Course of Events	Add Notification to Existing Incident 1.1.1. User reviews the Notification details and selects to link it to an existing Incident. 1.1.2. System displays list of Incidents meeting the following criteria: • Same Location as the Notification • Same Incident Date as the Notification 1.1.3. User selects one, or more, Incidents from the list and selects to save the association to the Notification. 1.1.4. System saves the link, updates the Incident record(s) and updates the Notification as Closed. 1.1.5. Exit UC. Remove Link to Incident 1.2.1. User selects to view Incidents linked to the selected Notification. 1.2.2. System displays list of incidents linked to the selected Notification. 1.2.3. User selects to remove one, or more, Incidents from the Notification and saves the changes. 1.2.4. System updates incident record(s), removing the association to the selected Notification. Navigation is returned to the Notification List. 1.2.5. Exit UC.

	Close Notification 1.3.1. User reviews the Notification details and selects to Close the Notification. 1.3.2. System updates the status of the Notification to 'Closed' and sets the following information: • Logged in user (who performed the action) • Date & Timestamp of close action. 1.3.3. Exit UC. Add Comments 1.4.1. User enters Comments against the Notification. 1.4.2. Return to normal course 1. Re-open Closed Notification 1.5.1. User selects Closed Notification and selects to re-open it. 1.5.2. System updates the Notification record and sets the status to Open. 1.5.3. Exit UC.

Diagrams	
Links to Other	
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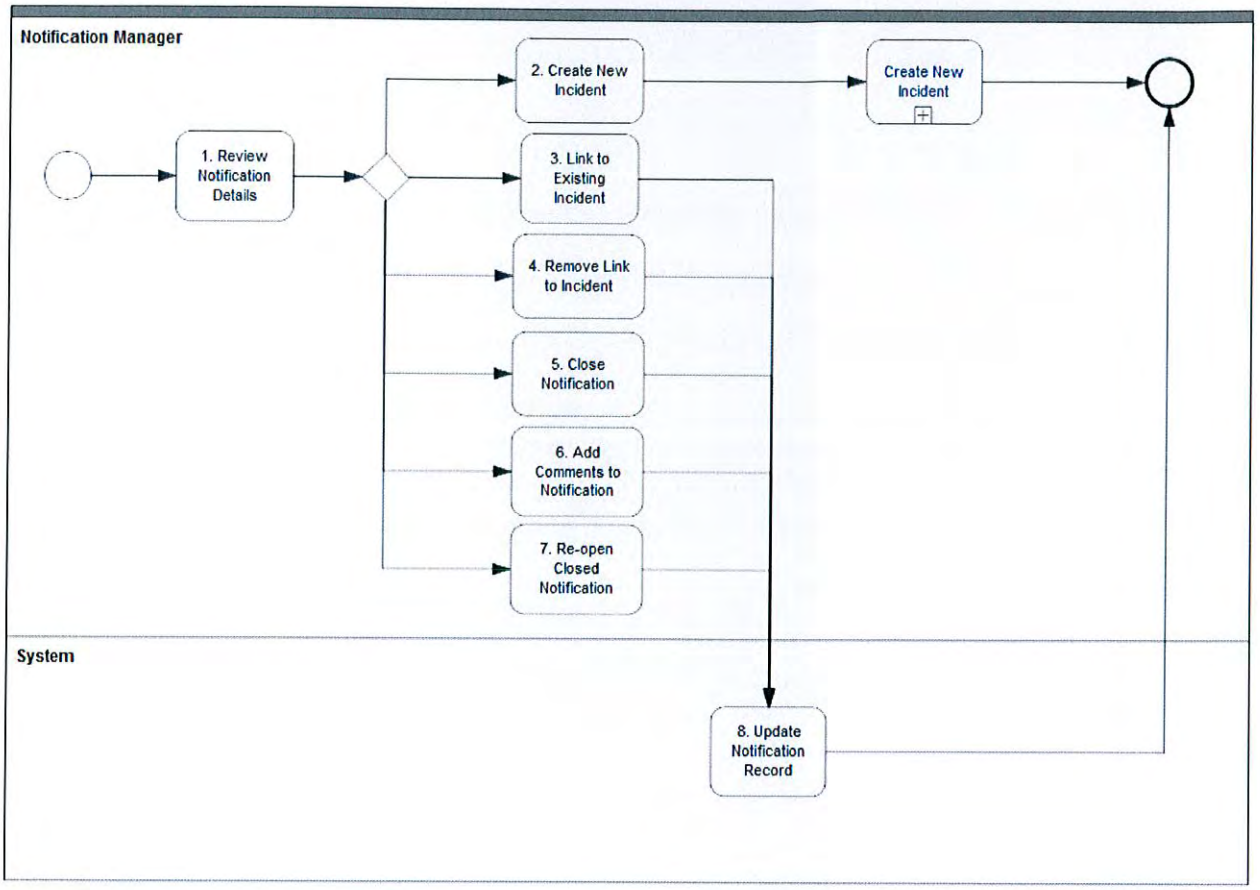
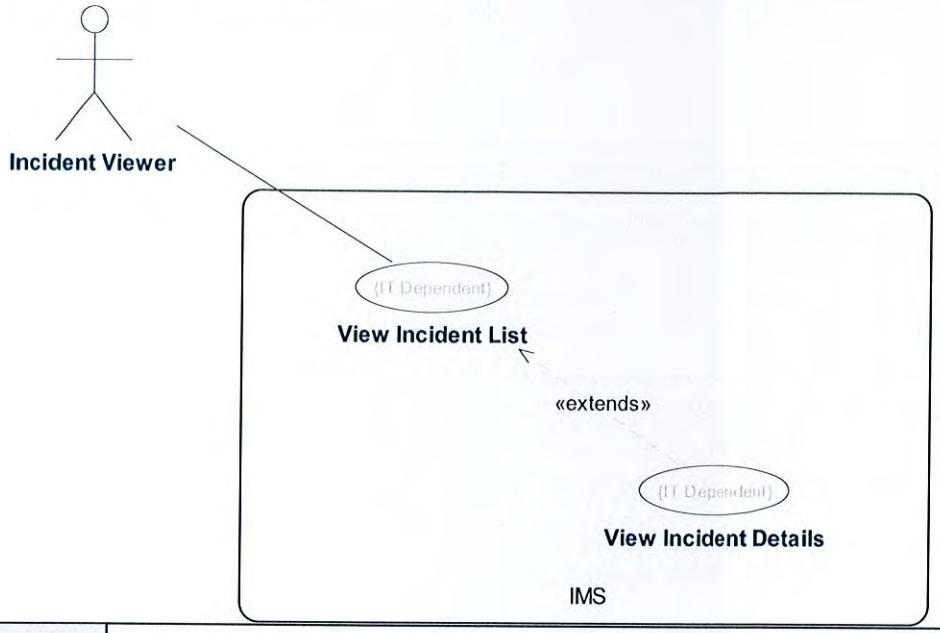
5.7.2 System Process Diagram



5.8 View Incident List

5.8.1 Use Case Specification



Aliases	
Description	User views the list of Incidents based on permissions and user defined filter settings.
UID	IMS-UC-007
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident records exist.
Postcondition	System displays list of Incidents to the user.
Questions/Notes	

Normal Course of Events	1. User selects to view list of Incidents. 2. System lists Incidents to the user, displaying the following: • Incident records displayed are filtered based on the logged in user/role.

	• List field & column settings based on default setting or user's saved configuration. • New/unopened Incidents are highlighted to the user • The Incident status is indicated in the list. 3. User selects an Incident record from the list to view details. 4. System displays the details of the selected Incident (include View Incident Details). 5. Exit UC
Alternate Course of Events	2.1.1. System returns no Incident records based on filter setting and displays message, "No Incident found". 2.1.2. Exit UC. Filter Records 3.1.1. User applies a filter to the Incident records. 3.1.2. System applies filter criteria and displays matching results in the Incident List. 3.1.3. Return to normal course 2. Search Records 3.2.1. User enters search criteria: • date range (date from & date to) • free text and selects to Search. 3.2.2. System applies search parameters and displays all matching Incident records. 3.2.3. Return to normal course 3. Sort Records 3.3.1. User applies a sort order (ascending/descending) to the Incident List. 3.3.2. System applies sort order to the results displayed in the Incident List. 3.3.3. Return to normal course 2. Closed Incidents: 3.4.1. User selects to view Closed Incidents. 3.4.2. System filters list to show only Closed incidents.

Diagrams	
Links to Other	
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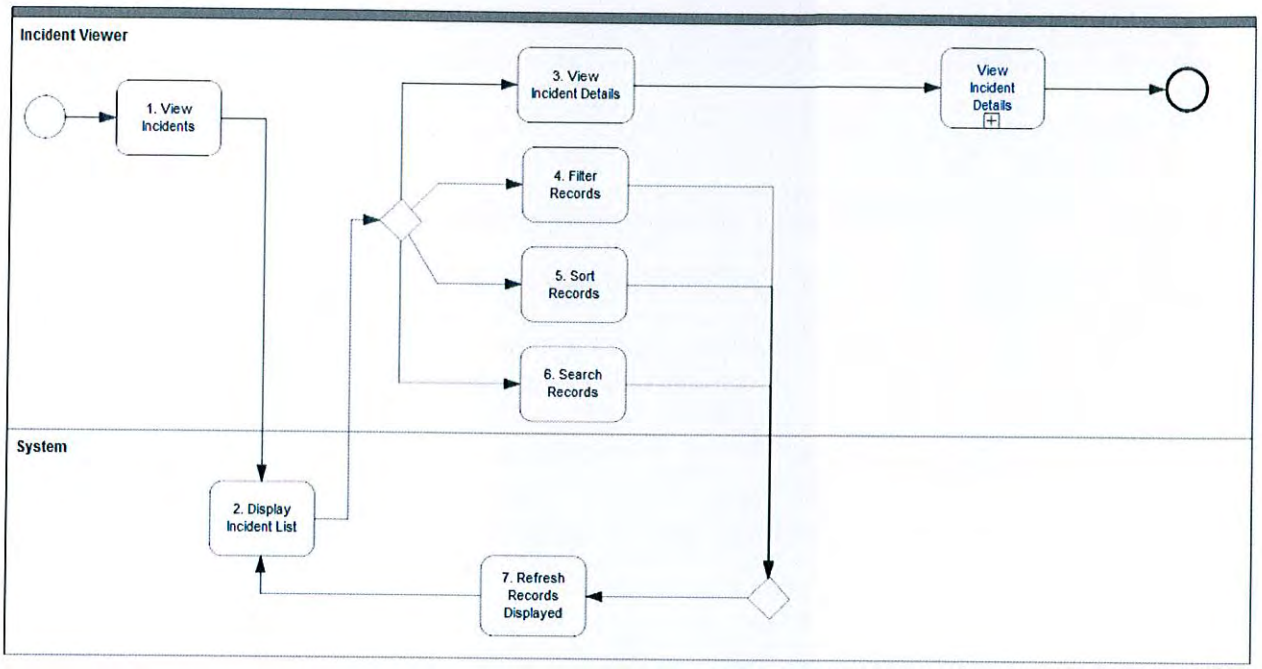
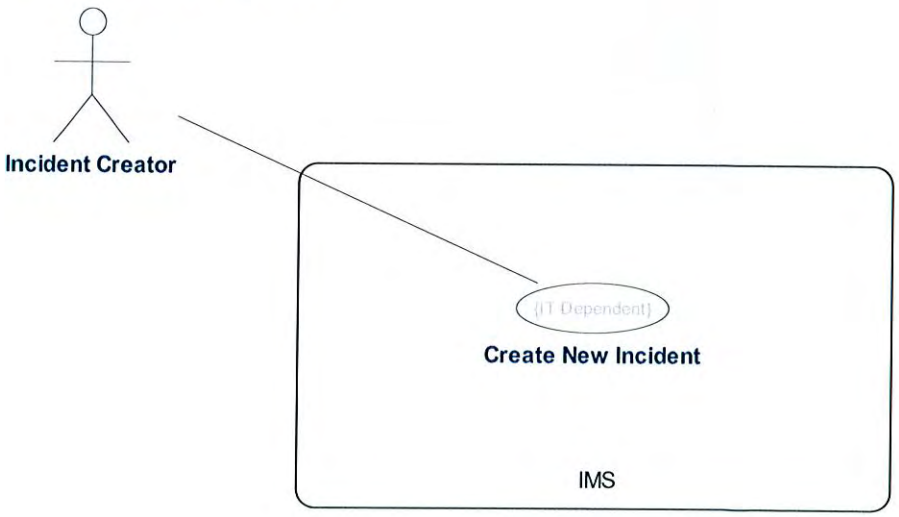
5.8.2 System Process Diagram



5.9 Create New Incident

5.9.1 Use Case Specification



Aliases	
Description	User creates a new Incident record.
UID	IMS-UC-008

Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident details not captured in system.
Postcondition	Incident record created. Status is set to Initial Report/In Progress. Notification status is set to Closed (if applicable).
Questions/Notes	

Normal Course of Events	1. User selects to create a new Incident. 2. System displays new Incident form. 3. User enters incident details and saves. 4. System saves the Incident record and highlights the new Incident to the relevant Incident Manager(s). 5. Exit UC.
Alternate Course of Events	Created from Notification 1.1.1. User selects to create a new Incident using a Notification as the source. 1.1.2. System displays screen to create the new Incident with fields pre-populated from the Notification record (ref. data requirements). 1.1.3. Return to normal course 2. Cancel Create 3.1.1. User selects to cancel the creation of the new Incident record. 3.1.2. System prompts user to confirm cancel and lose any changes. 3.1.3. User confirms cancel. 3.1.4. Exit UC. Data Validation Failed 4.1.1. User enters invalid data and submits the form. 4.1.2. System displays error message and highlights field in error. 4.1.3. Return to normal course 3. Missing Mandatory 4.2.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user.

	4.2.2. Return to normal course 3.

Diagrams	
Links to Other	
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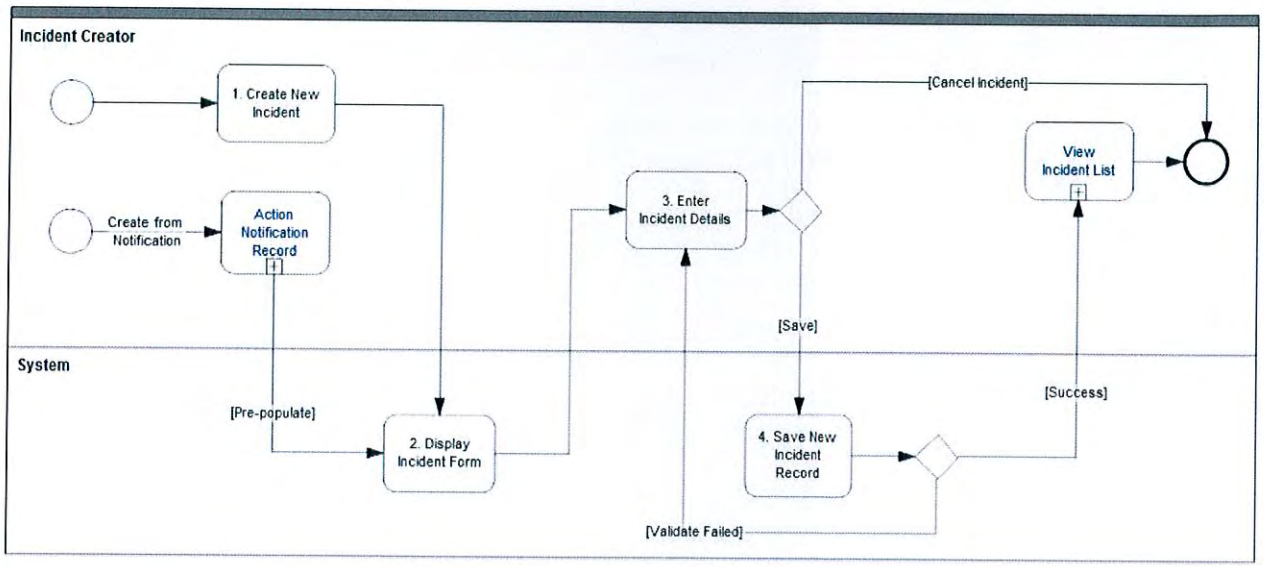
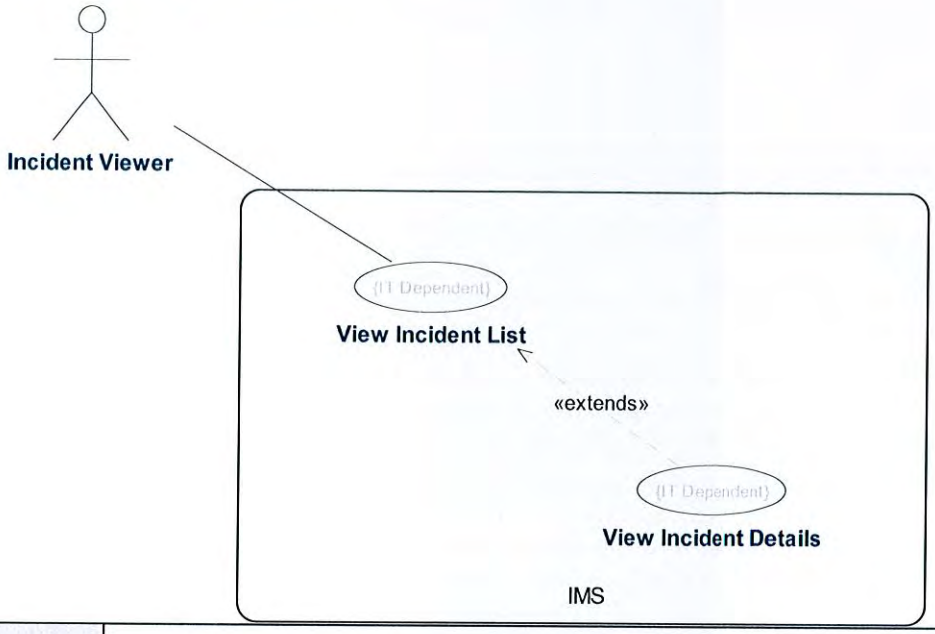
5.9.2 System Process Diagram



5.10 View Incident Details

5.10.1 Use Case Specification



Aliases	
Description	Authorised user views the details of a selected Incident record.
UID	IMS-UC-009
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident record exists.
Postcondition	Incident details are displayed to the user.
Questions/Notes	

Normal Course of Events	1. User selects to open and view the details of an Incident record. 2. System displays the details of the Incident record to the user. 3. Exit UC.

Alternate Course of Events	Access Denied 2.1.1. User does not have access to view certain details recorded against the Incident. System prevents user from viewing secured information. 2.1.2. Return to normal course 2.

Diagrams	
Links to Other	
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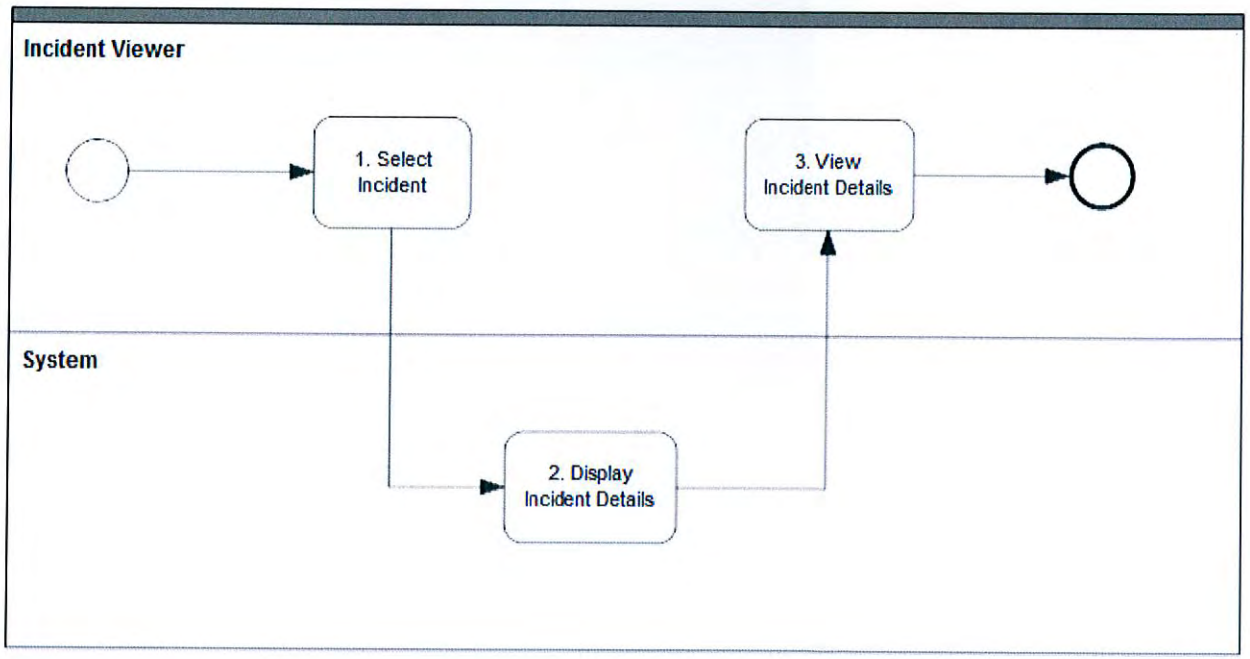
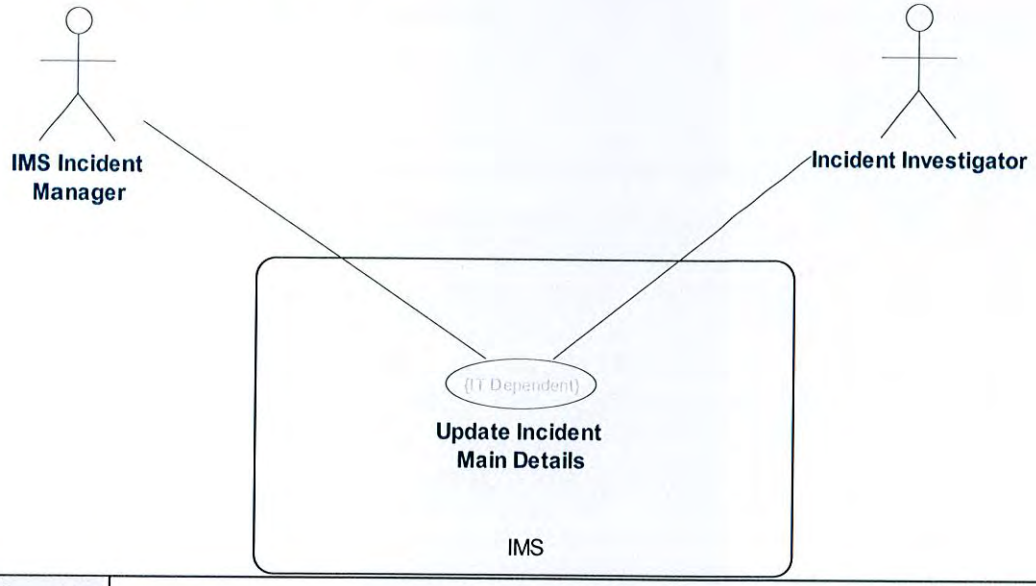
5.10.2 System Process Diagram



5.11 Update Incident Main Details

5.11.1 Use Case Specification



Aliases	
Description	Authorised user updates the Main Details of the Incident record.
UID	IMS-UC-010
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident exists. User has access to update Incident. Incident details are being viewed.
Postcondition	Updates to Incident have been saved by the system.
Questions/Notes	

Normal Course of	1. User enters/updates data against the Incident record and saves. 2. System validates and saves the data entered.

Events	3. Exit UC.
Alternate Course of Events	Add attachments 1.1.1. User selects to add an attachment to the Incident. 1.1.2. Return to normal course 1. Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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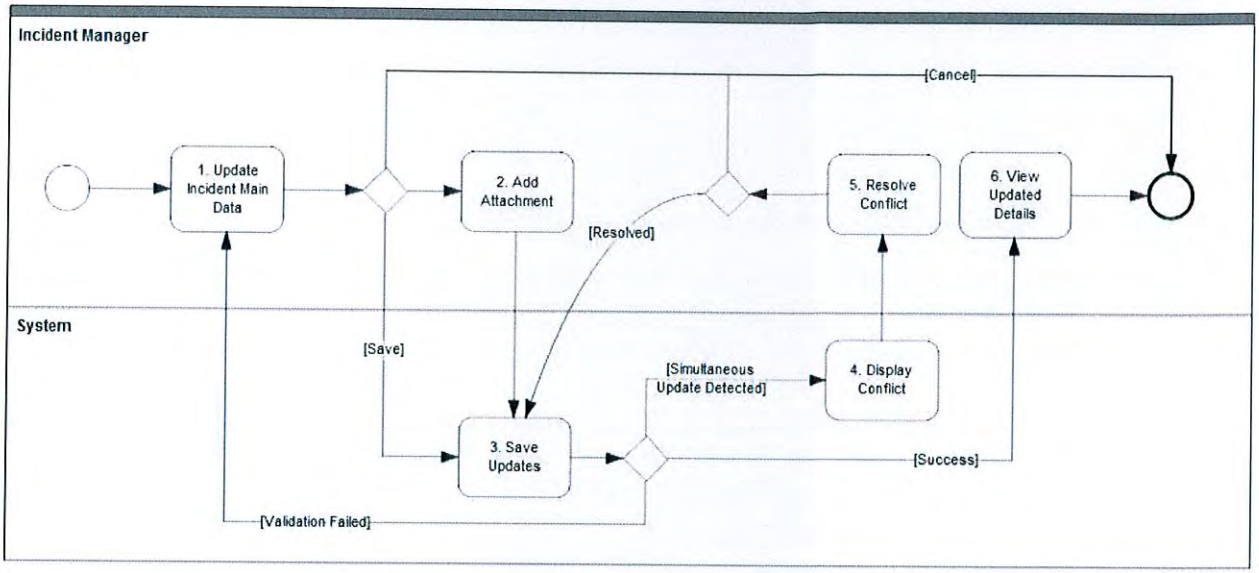
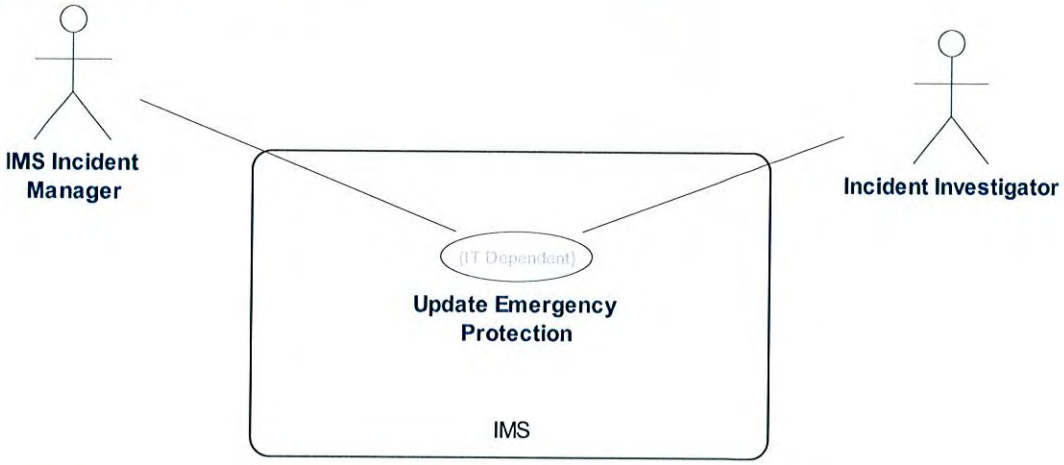
5.11.2 System Process Diagram



5.12 Update Emergency Protection

5.12.1 Use Case Specification



Aliases	
Description	Authorised user updates the Emergency Protection details for the Incident.
UID	IMS-UC-011
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes Emergency Protection requirement.
Postcondition	Emergency Protection details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Emergency Protection details taken for the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 3. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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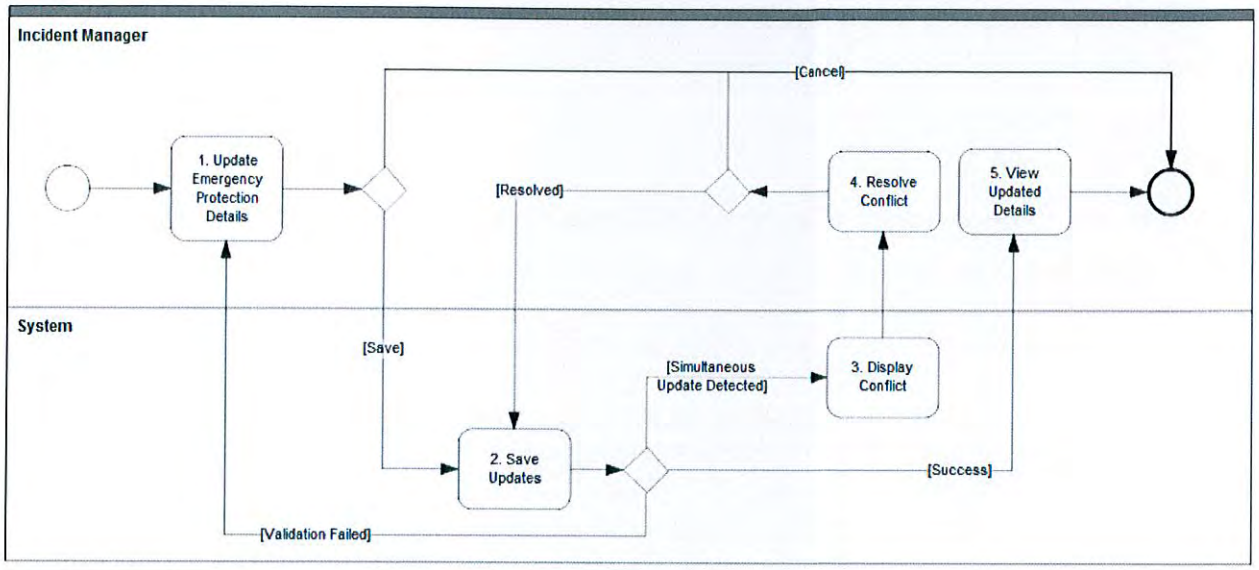
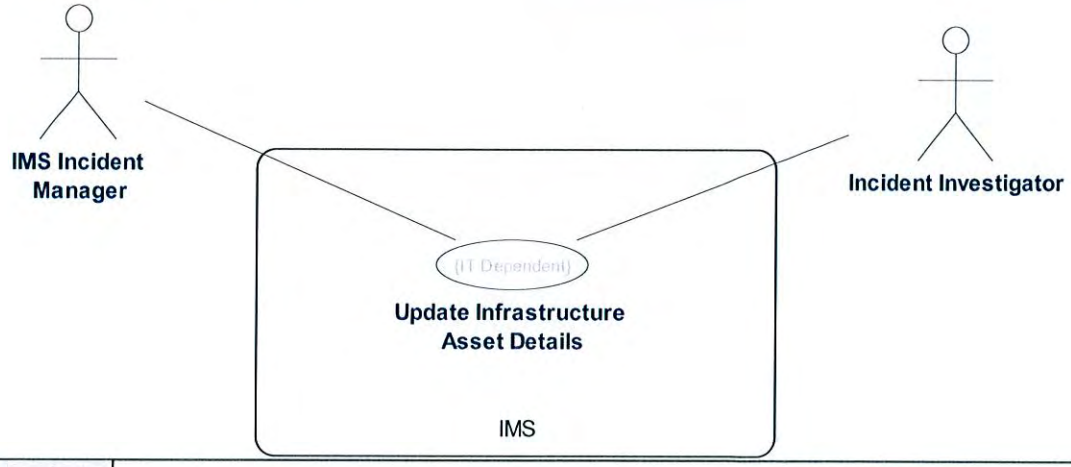
5.12.2 System Process Diagram



5.13 Update Infrastructure Asset Details

5.13.1 Use Case Specification



Aliases	
Description	Authorised user updates the Infrastructure Asset details for the Incident.
UID	IMS-UC-012
Abstract/Partial	false
Decision Point	false
Inherits	

Actors	
Precondition	Incident has been created. Incident Category selected includes Infrastructure Asset requirement.
Postcondition	Infrastructure Asset details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Infrastructure Asset details related to the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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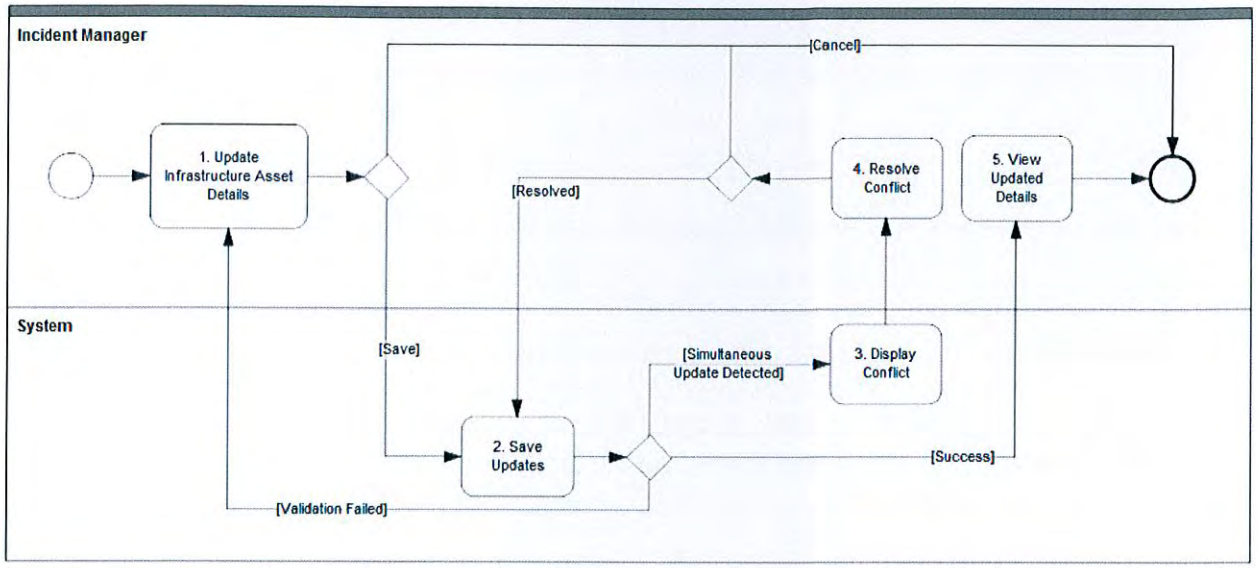
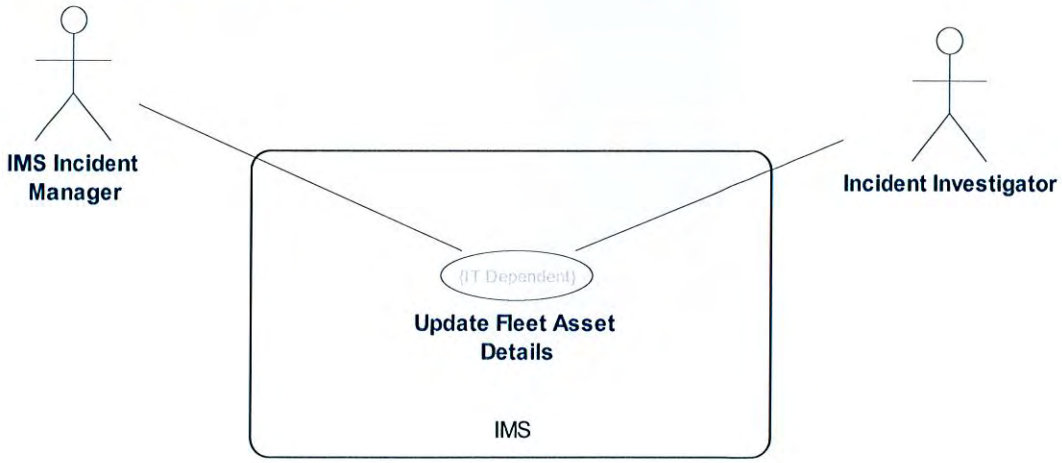
5.13.2 System Process Diagram



5.14 Update Fleet Asset Details

5.14.1 Use Case Specification



Aliases	
Description	Authorised user updates the Fleet Asset details for the Incident.
UID	IMS-UC-013
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes Fleet Asset requirement.
Postcondition	Fleet Asset details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Fleet Asset details taken for the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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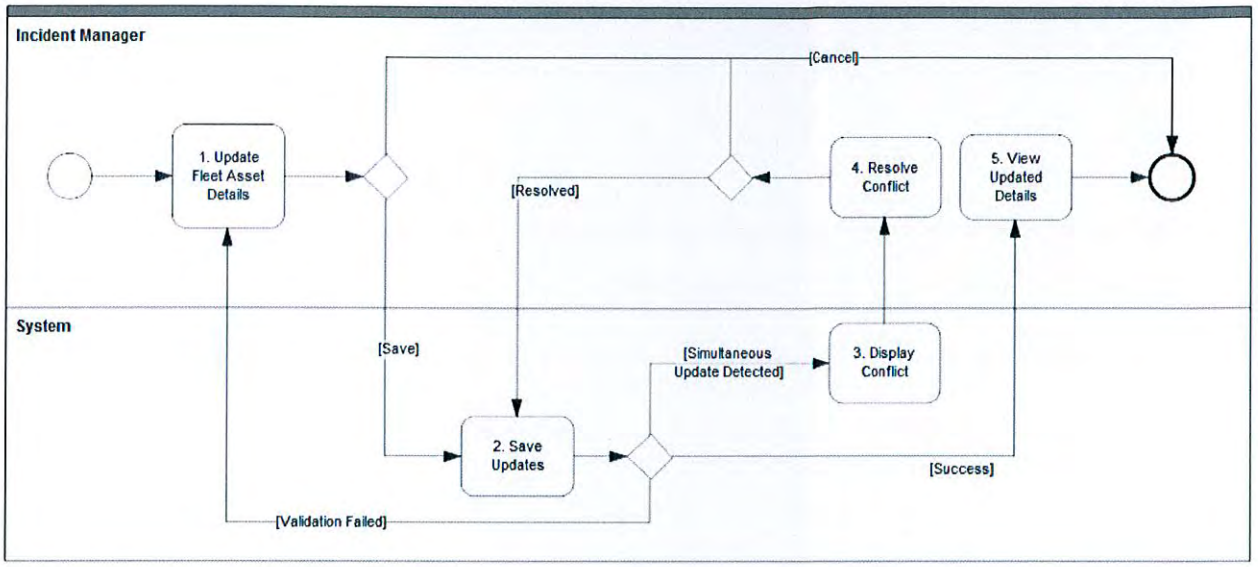
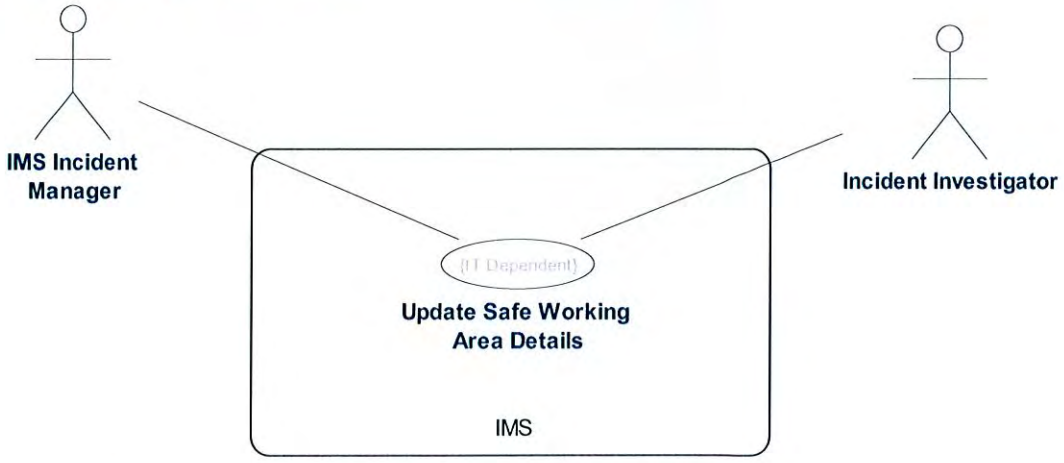
5.14.2 System Process Diagram



5.15 Update Safe Working Area Details

5.15.1 Use Case Specification



Aliases	
Description	Authorised user updates the Safeworking Area details for the Incident.
UID	IMS-UC-014
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes Safeworking Area requirement.
Postcondition	Safeworking Area details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Safeworking Area details taken for the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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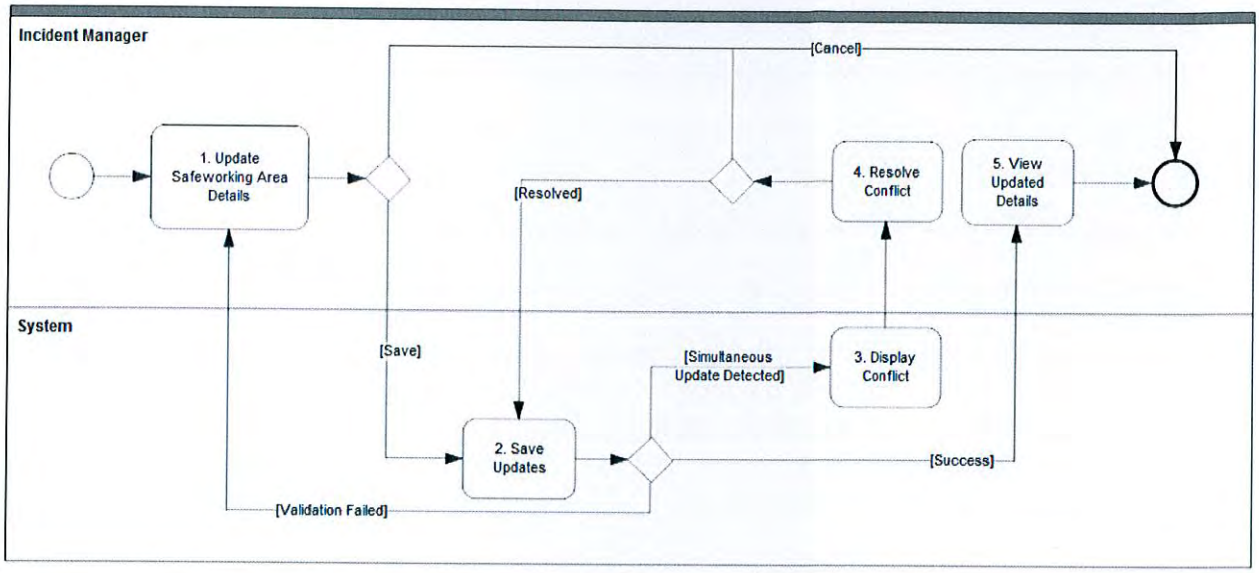
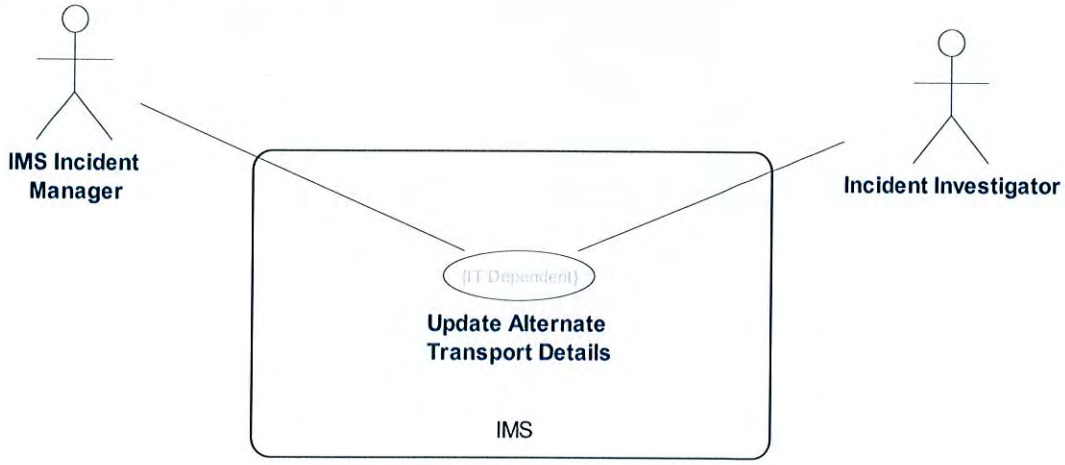
5.15.2 System Process Diagram



5.16 Update Alternate Transport Details

5.16.1 Use Case Specification



Aliases	
Description	Authorised user updates the Alternate Transport details for the Incident.
UID	IMS-UC-015
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes Alternate Transport requirement.
Postcondition	Alternate Transport details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Alternate Transport details taken for the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1. Email Order Confirmation 3.1.1. User selects to email the order confirmation to selected bus company 3.1.2. System sends email containing bus order details to selected bus company. 3.1.3. Exit Use Case

Diagrams	
Links to Other	

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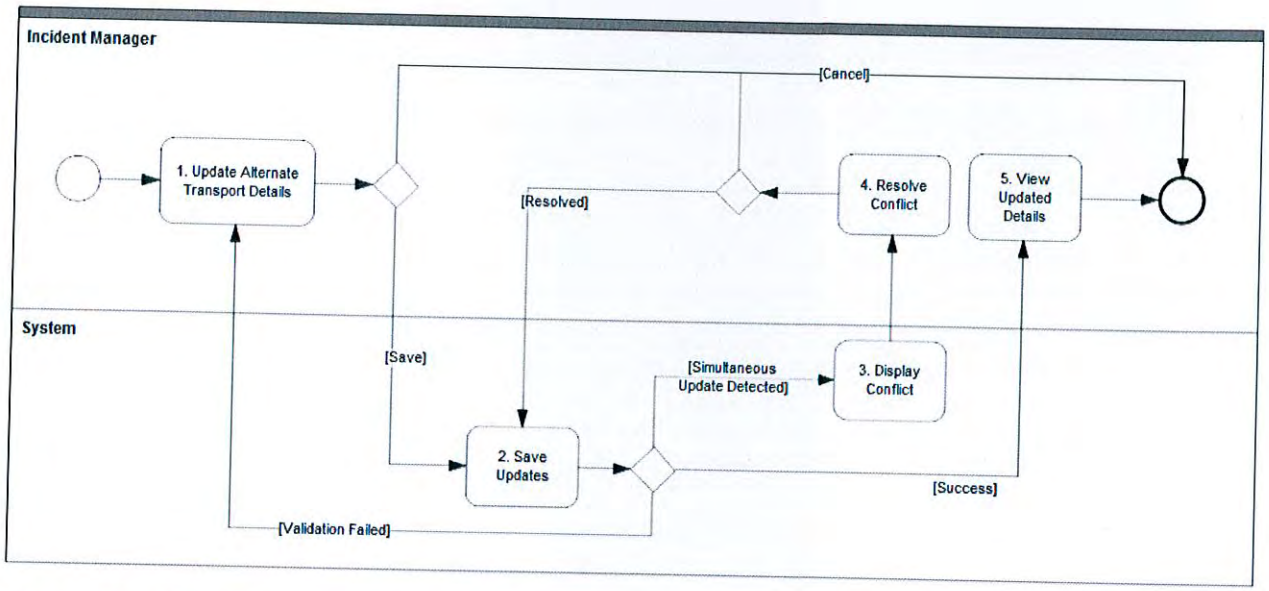
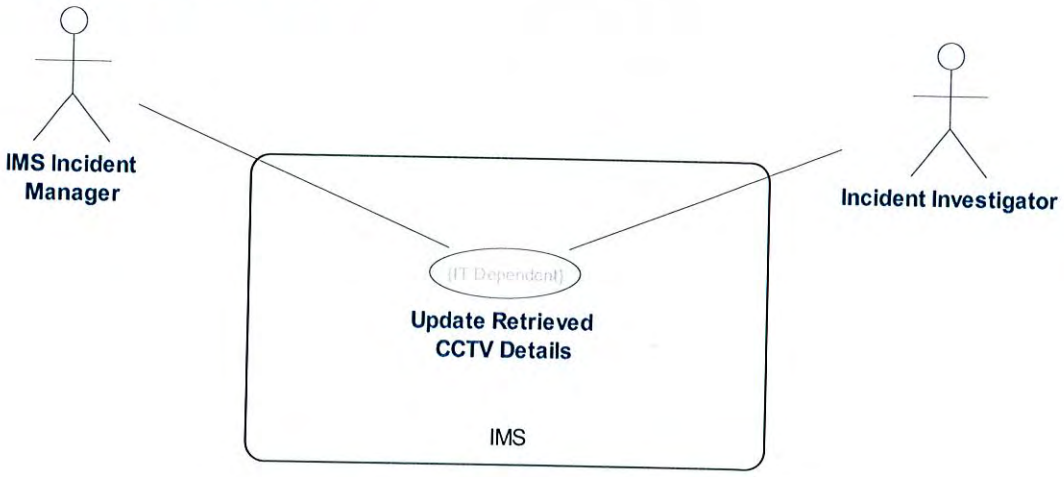
5.16.2 System Process Diagram



5.17 Update Retrieved CCTV Details

5.17.1 Use Case Specification



Aliases	
Description	Authorised user records a link to retrieved CCTV for the Incident.
UID	IMS-UC-016

Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes CCTVrequirement. CCTV request has been submitted and fulfilled (outside the system).
Postcondition	Link to CCTV is recorded.
Questions/Notes	

Normal Course of Events	1. User records link to CCTV saved for the Incident.. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	

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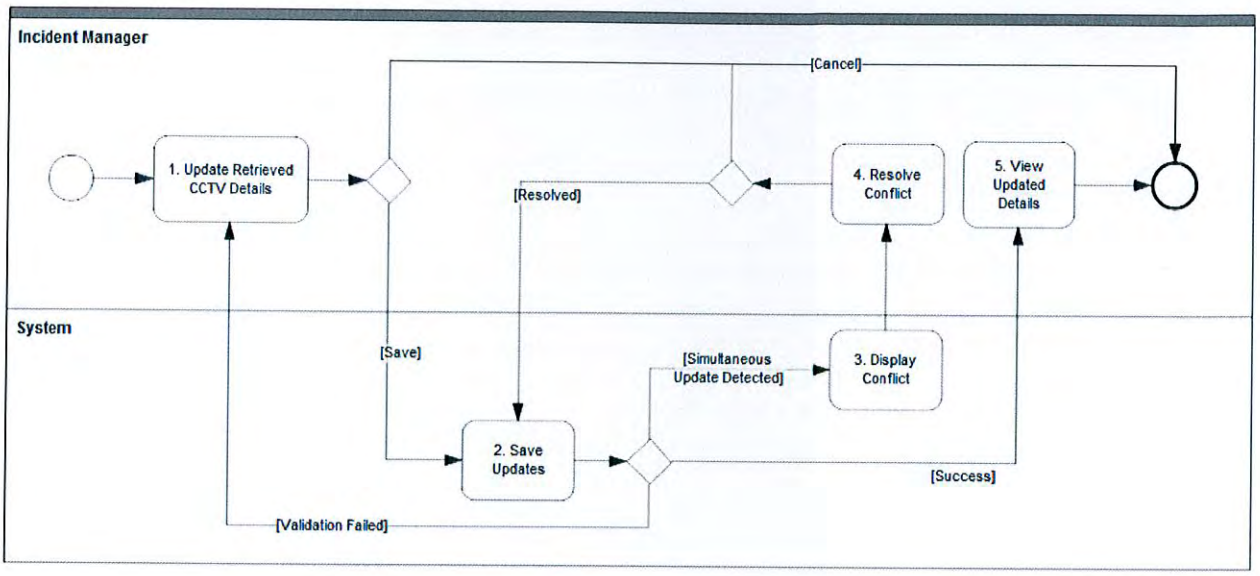
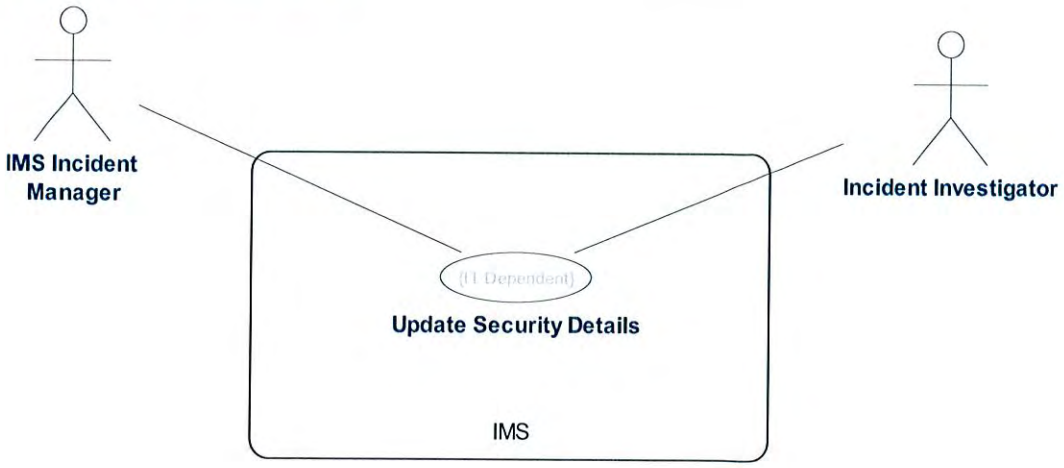
5.17.2 System Process Diagram



5.18 Update Security Details

5.18.1 Use Case Specification



Aliases	
Description	Authorised user updates the Security details for the Incident.
UID	IMS-UC-017

Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes Security requirement.
Postcondition	Security details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Security details taken for the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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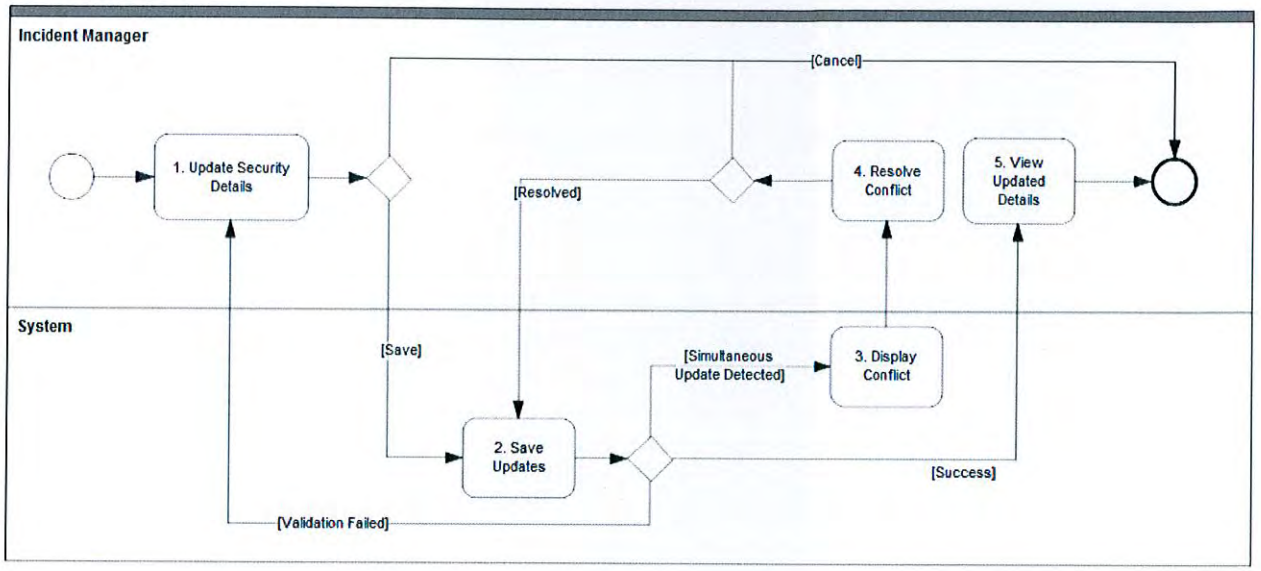
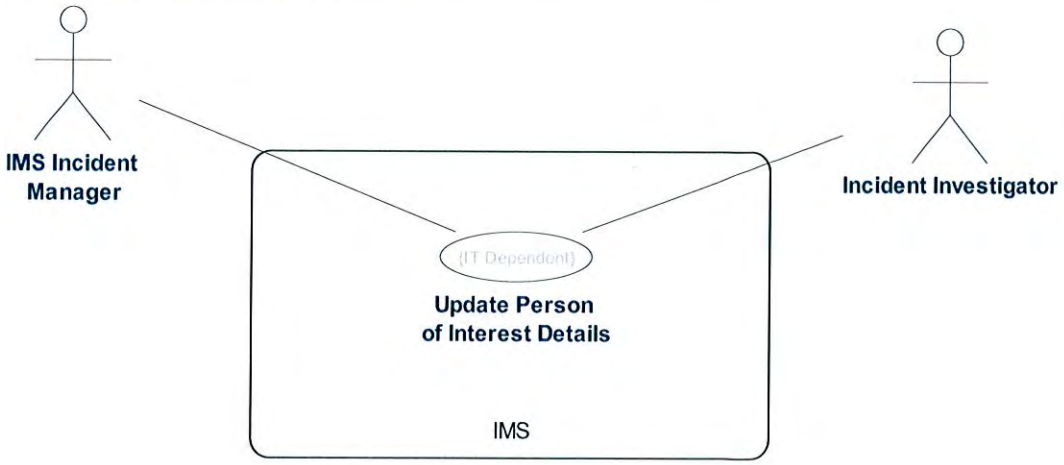
5.18.2 System Process Diagram



5.19 Update Person of Interest Details

5.19.1 Use Case Specification



Aliases	
Description	Authorised user updates the Person of Interest details for the Incident.
UID	IMS-UC-018

Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes Person of Interest requirement.
Postcondition	Person of Interest details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Person of Interest details taken for the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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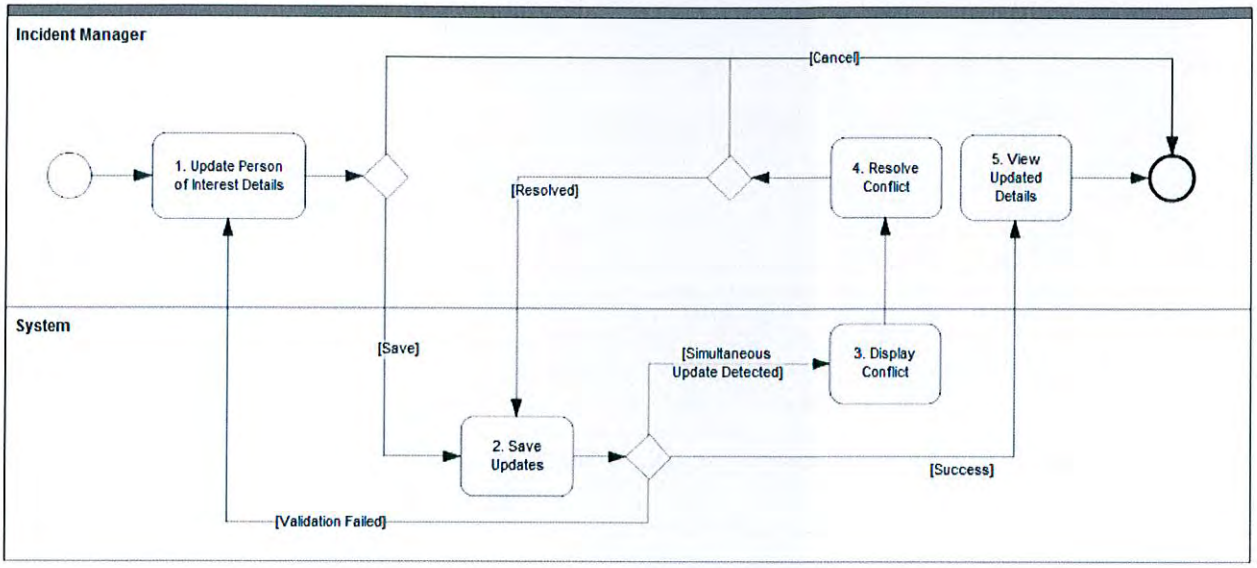
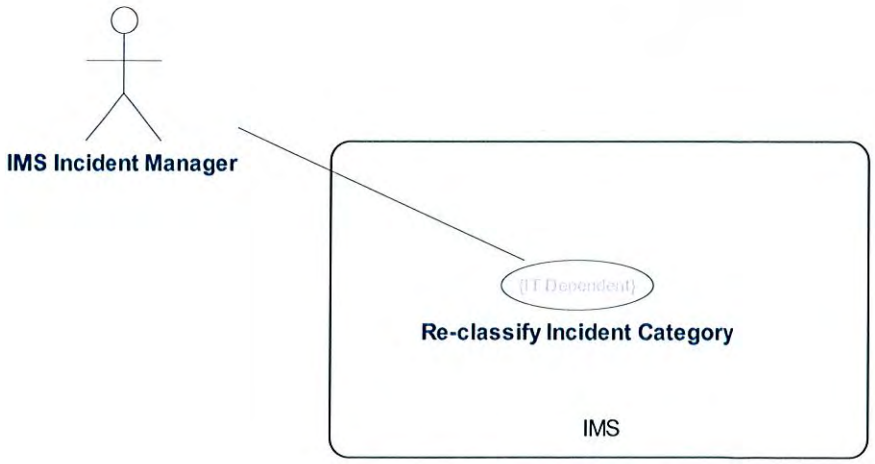
modified	

5.19.2 System Process Diagram



5.20 Re-classify Incident Category

5.20.1 Use Case Specification



Aliases	
Description	The Incident Manager adds/removes Incident categories to/from the Incident record, reclassifying the type of Incident.
UID	IMS-UC-019

Abstract/Partial	false
Decision Point	false
Inherits	
Actors	Incident Manager
Precondition	Incident record exists with one or more Categories assigned.
Postcondition	Category (type) of Incident is updated.
Questions/Notes	

Normal Course of Events	1. User selects to reclassify the type of Incident and adds one or more incident categories. 2. System updates the relevant data capture fields associated with the selected category(ies). 3. User selects to save the Incident. 4. System saves the Incident record. 5. Exit UC.
Alternate Course of Events	Update Category 1.1.1. User selects to update one or more existing categories recorded for the Incident. 1.1.2. Return to normal course 2. Remove Category 1.2.1. User selects to remove one or more categories from the Incident. 1.2.2. Return to normal course 2. Mandatory Information 4.1.1. User has removed all Incident Categories, system displays error message and prevents save. 4.1.2. Return to normal course 2.

Diagrams	
Links to Other	
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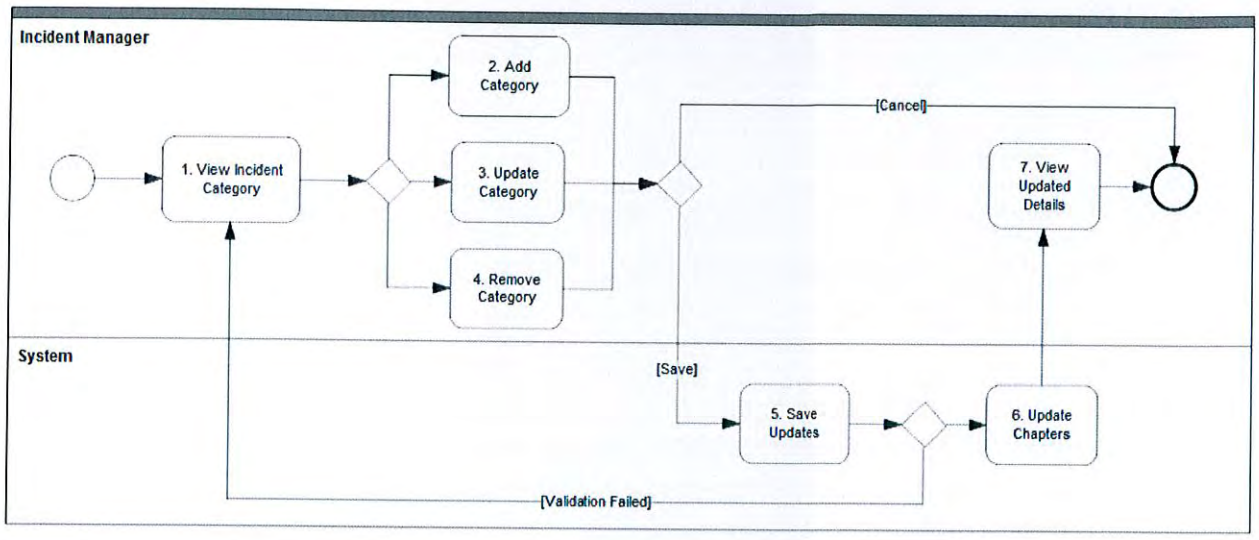
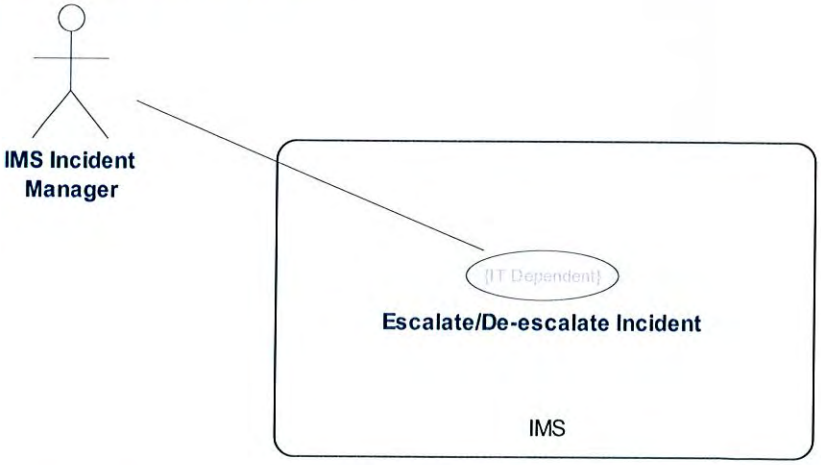
5.20.2 System Process Diagram



5.21 Escalate/De-escalate Incident

5.21.1 Use Case Specification



Aliases	
Description	Raise and lower the severity of the Incident record.
UID	IMS-UC-020
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	Incident Manager
Precondition	Incident record exists. User viewing Incident details.
Postcondition	Incident severity is raised/lowered accordingly.
Questions/Notes	

Normal Course of Events	1. User Increases the priority of the Incident and saves. 2. System saves the Incident record. 3. Exit UC.
Alternate Course of Events	1.1.1. User lowers the priority of the Incident and saves. 1.1.2. Return to normal course 2.

Diagrams	
Links to Other	
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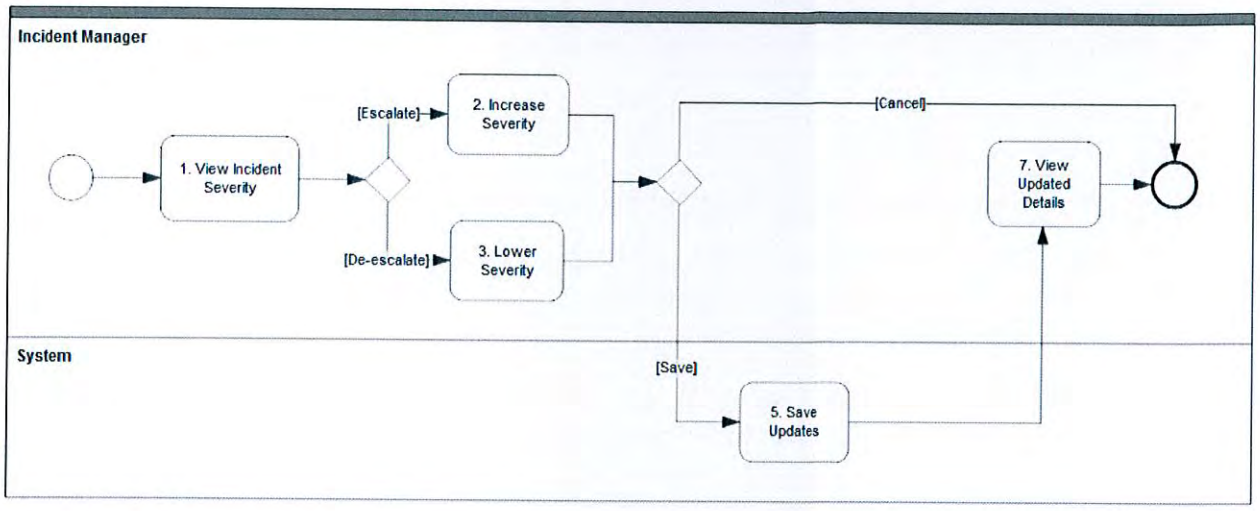
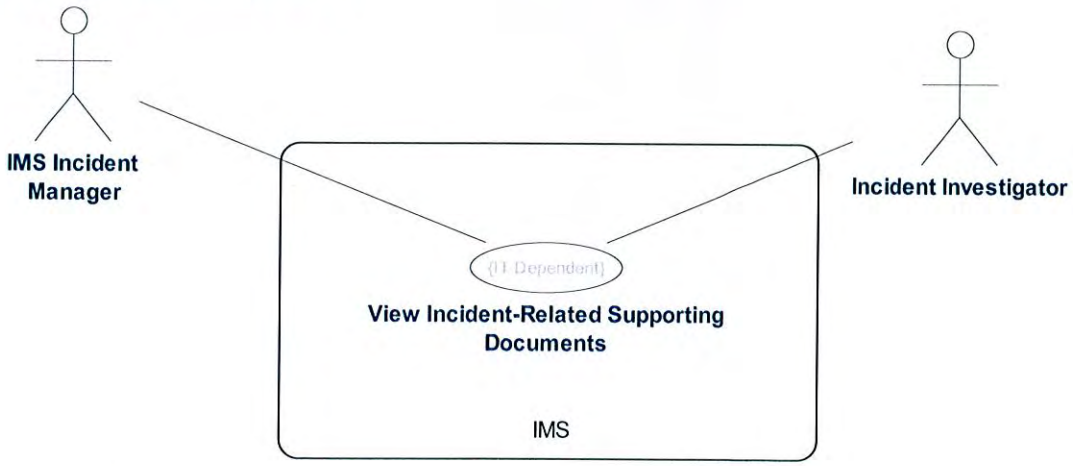
5.21.2 System Process Diagram



5.22 View Incident Related Supporting Documents

5.22.1 Use Case Specification



Aliases	
Description	System filters and displays relevant procedures and other supporting documentation relevant to the Incident Category and Location.
UID	IMS-UC-021
Abstract/Partial	false
Decision Point	false
Inherits	

Actors	Incident Manager, Incident Investigator
Precondition	Documentation has been configured and mapped to Incident Locations. Documentation has been configured and mapped to Incident Categories.
Postcondition	Documents relevant to the Incident at hand are displayed to the user.
Questions/Notes	

Normal Course of Events	1. User selects to view supporting documentation. 2. System displays filtered list of documents. 3. User selects document to view. 4. System opens document in relevant application. 5. User Views the document. 6. Exit Use Case.
Alternate Course of Events	2.1.1. No documents found, system displays informative message. 2.1.2. Exit Use Case.

Diagrams	
Links to Other	
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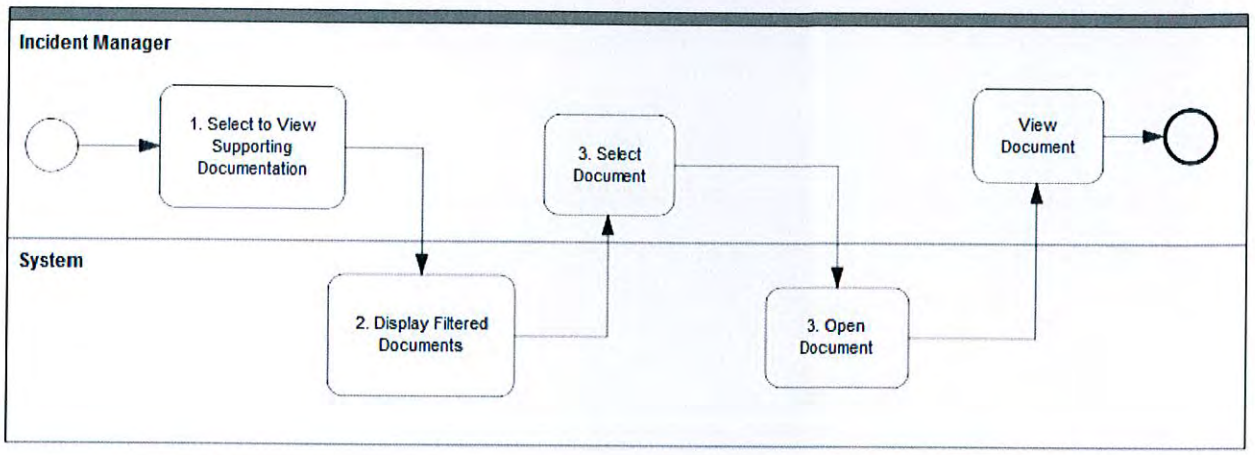
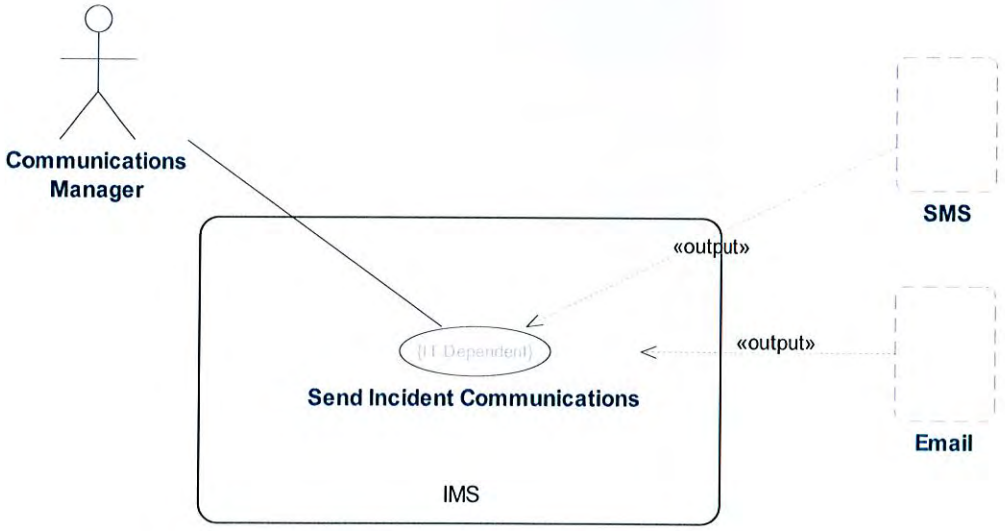
5.22.2 System Process Diagram



5.23 Send Incident Communications

5.23.1 Use Case Specification



Aliases	
Description	The Communications Manager sends emails and/or SMS to contacts.
UID	IMS-UC-022
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	
Precondition	Contacts and contact details are loaded in to the IMS. Message templates are defined. Incident record selected.
Postcondition	Communication message is sent to selected recipients.
Questions/Notes	

Normal Course of Events	1. User selects to send email communication. 2. System displays pre-populated email template containing the following incident details: • Identifier • Category(ies) • Date & Time of incident • Location of incident • Severity • Description of incident • Details of impacted services • Resolution ETA • Link to Incident 3. User selects recipient and selects to send the communication. 4. System sends communication to selected recipient(s) and displays confirmation message.5. Exit UC.
Alternate Course of Events	Send SMS 1.1.1. User selects to send SMS communication. 1.1.2. System displays pre-populated SMS template containing the following incident details: • Identifier • Category(ies) • Date & Time of incident • Location of incident • Severity • Link to Incident 1.1.3. Return to normal course 3. Multiple Recipients 3.1.1. User selects multiple recipients and selects to send the communication. 3.1.2. Return to normal course 4.

	Distribution List 3.2.1. User selects a distribution list and selects to send the communication. 3.2.2. Return to normal course 4. Modify Text 3.3.1. User modifies the pre-populated text and selects to send the communication. 3.3.2. Return to normal course 4. Invalid Contact Details 4.1.1. One or more selected recipients do not have valid contact details recorded, system displays error message advising user of failed recipients. 4.1.2. Exit UC. Message Send Failed 4.2.1. Sending message(s) fails, system displays error message to user. 4.2.2. Exit UC.

Diagrams	
Links to Other	
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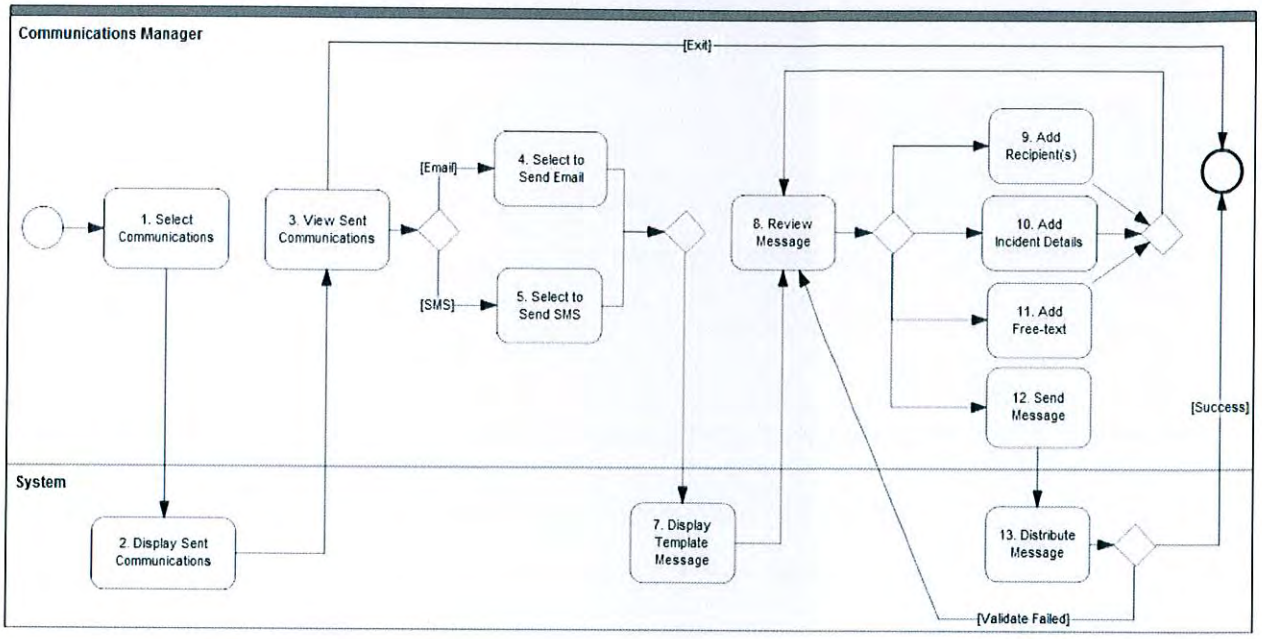
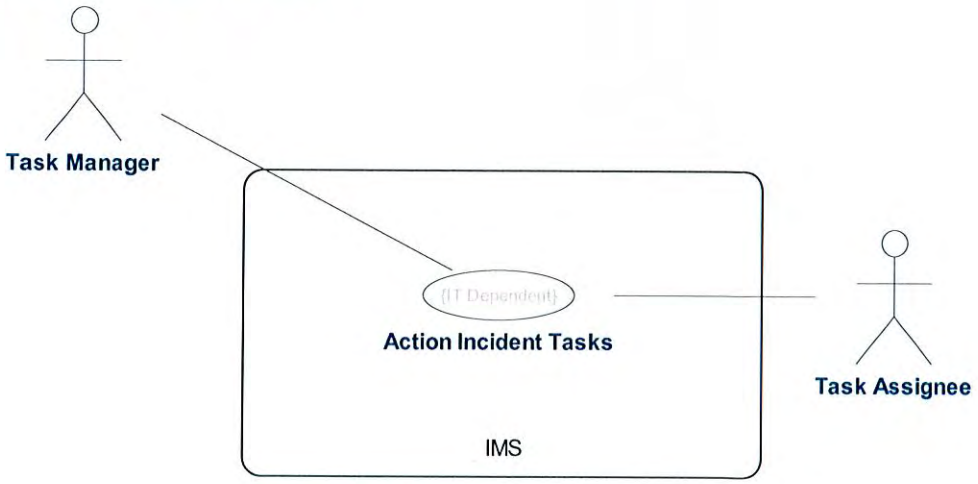
5.23.2 System Process Diagram



5.24 Action Incident Tasks

5.24.1 Use Case Specification



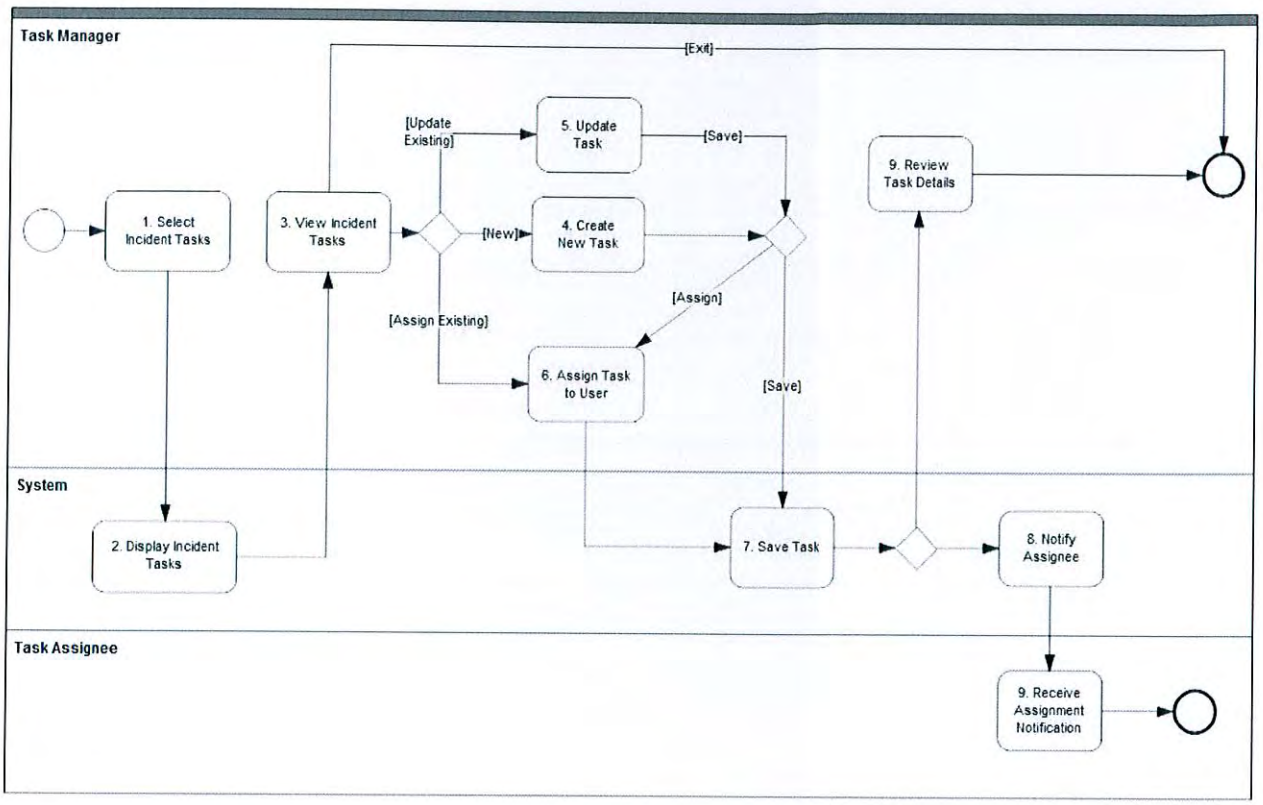
Aliases	
Description	Task Manager creates, updates and assigns tasks related to Incident resolution.
UID	IMS-UC-023
Abstract/Partial	false
Decision Point	false
Inherits	

Actors	
Precondition	Incident has been created.
Postcondition	Incident Tasks are created/updated/assigned.
Questions/Notes	

Normal Course of Events	1. User selects to view Tasks for an Incident. 2. System displays existing Task list. 3. User Views Task list for the Incident and selects to Create a new Task. 4. System displays Task details. 5. User enters Task details and saves. 6. System validates and saves the Task. 7. User reviews saved Task Details. 8. Exit Use Case.
Alternate Course of Events	Update Task 3.1.1. User selects existing Task to update. 3.1.2. Return to normal course 4. Assign Task 5.1.1. User Assigns the Task to another user and saves. 5.1.2. Return to normal course 6. Accept Task 5.2.1. User acknowledges acceptance of the Task assigned to them. 5.2.2. Return to normal course 6. Reject Task 5.3.1. User rejects acceptance of the Task assigned to them. 5.3.2. Return to normal course 6. Cancel Task 5.2.1. User selects to cancel the task. 5.2.2. Return to normal course 6. Notify Assignee 6.1.1. System sends notification to Task Assignee. 6.1.2. Return to normal course 6.

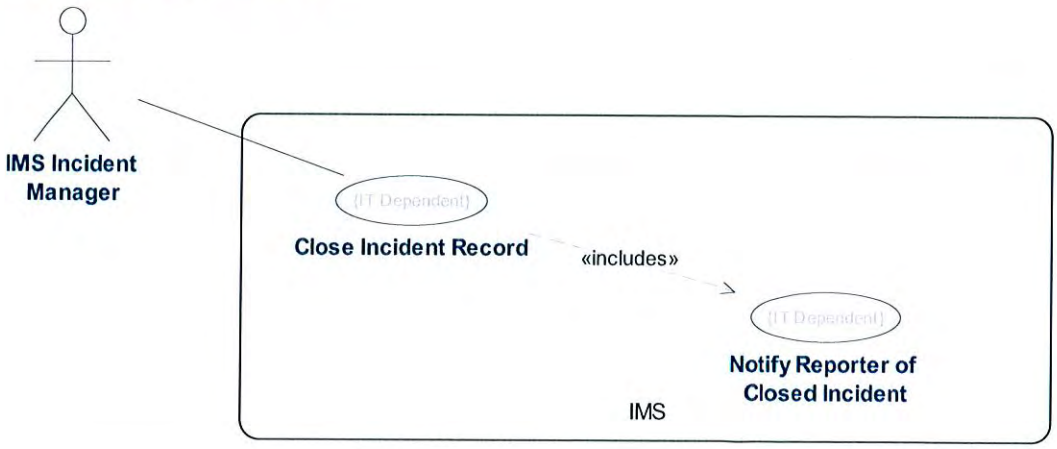
Diagrams	
Links to Other	
Last modified	amathews 02/11/15 04:16:09 PM

5.24.2 System Process Diagram



5.25 Close Incident

5.25.1 Use Case Specification



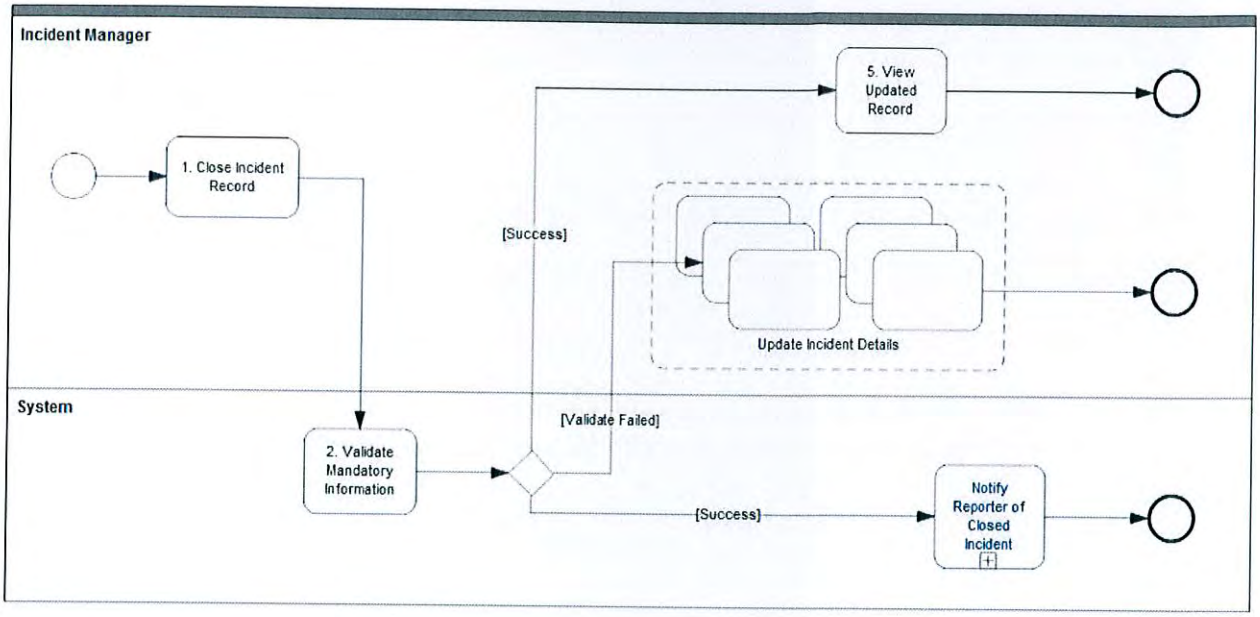
Aliases	
Description	Incident Manager closes an Incident record.
UID	IMS-UC-024
Abstract/Partial	false

Decision Point	false
Inherits	
Actors	
Precondition	Incident has been resolved.
Postcondition	Incident record is Closed.
Questions/Notes	

Normal Course of Events	1. User selects to Close the Incident record. 2. System validates Incident is complete and saves. 3. User views updated record. 4. Exit Use Case.
Alternate Course of Events	Validate Failed 2.1.1. Validation fails, system highlights fields in error to the user. 2.1.2. Exit Use Case. Cancel Incident 1.1.1. User selects to Cancel the Incident record. 1.1.2. System updates the status to Cancelled. 1.1.3. Exit Use Case.

Diagrams	
Links to Other	
Last modified	amathews 02/11/15 04:17:02 PM

5.25.2 System Process Diagram



5.26 Notify Reporter of Closed Incident

5.26.1 Use Case Specification

Aliases	
Description	The system notifies the original Reporter of an Incident that it has been closed.
UID	IMS-UC-025
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident is 'Closed' or 'Cancelled'
Postcondition	Notification email is sent to all Reporters linked to the Incident via Notifications
Questions/Notes	

Normal Course of Events	1. System sends email to all reporters linked to an Incident containing the following details: • Incident Id • Incident Category(ies) • Location

	• Status • Closed date & time • Link to Incident 2. Exit UC
Alternate Course of Events	No Reporters Identified 1.1.1. No Reporters are identified; email is not sent. 1.1.2. Exit UC. Invalid/Not Supplied Email Address 1.2.1. Email address of one or more Reporters is not recorded in the system; email is not sent. 1.2.2. Exit UC.

Diagrams	
Links to Other	
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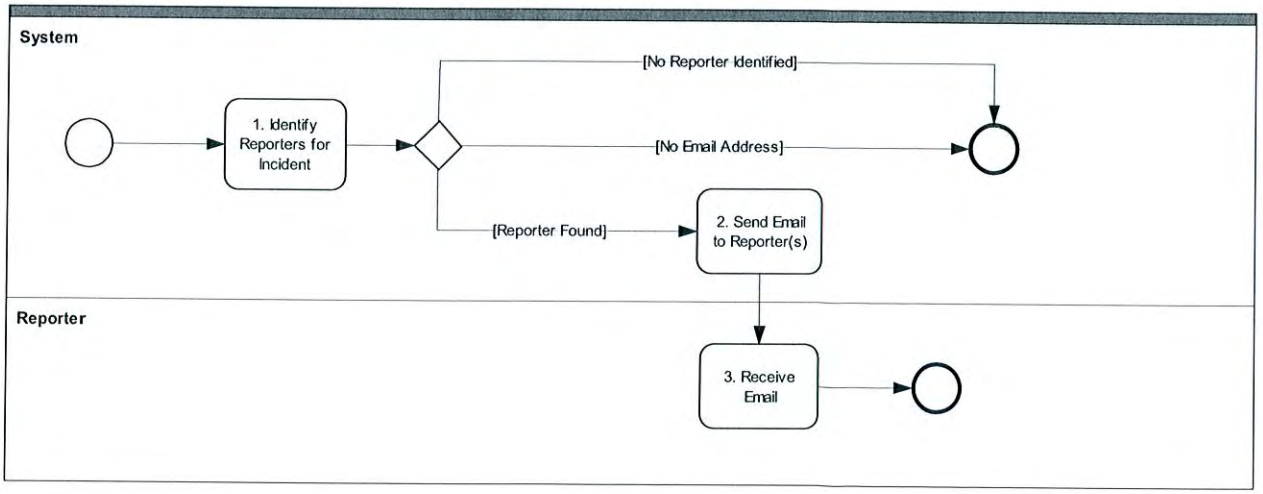
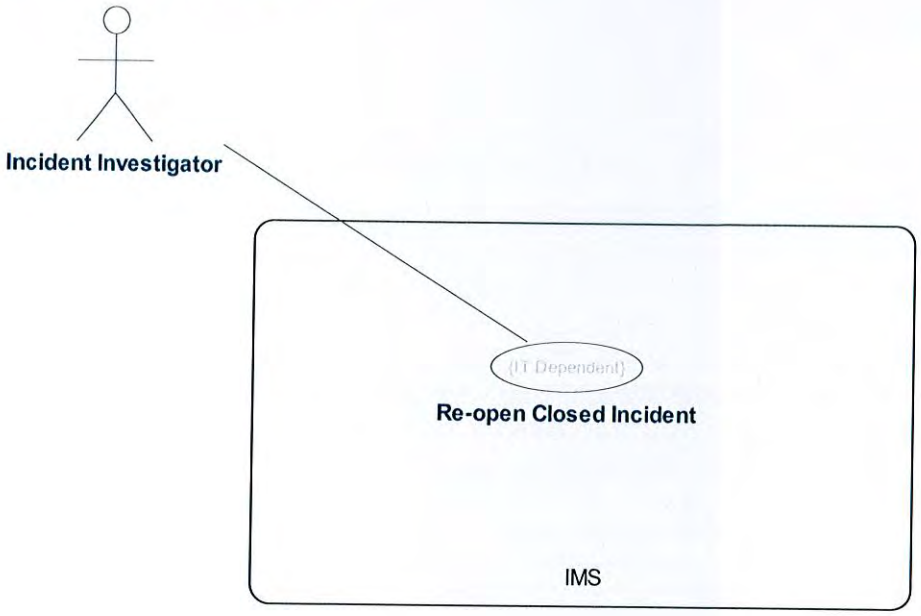
5.26.2 System Process Diagram



5.27 Re-open Closed Incident

5.27.1 Use Case Specification



Aliases	
Description	Authorised user re-opens a closed Incident to update the record, Typically used for updating the record with post-incident investigation and attribution.
UID	IMS-UC-047
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	Incident Investigator
Precondition	Incident is being viewed Incident is in a Closed state.
Postcondition	Incident is in Correction Mode state Incident details can be updated.
Questions/Notes	

Normal Course of Events	1. User selects to re-open the record in Correction Mode 2. System re-enables the record for updates. 3. Exit Use Case.
Alternate Course of Events	None

Diagrams	
Links to Other	
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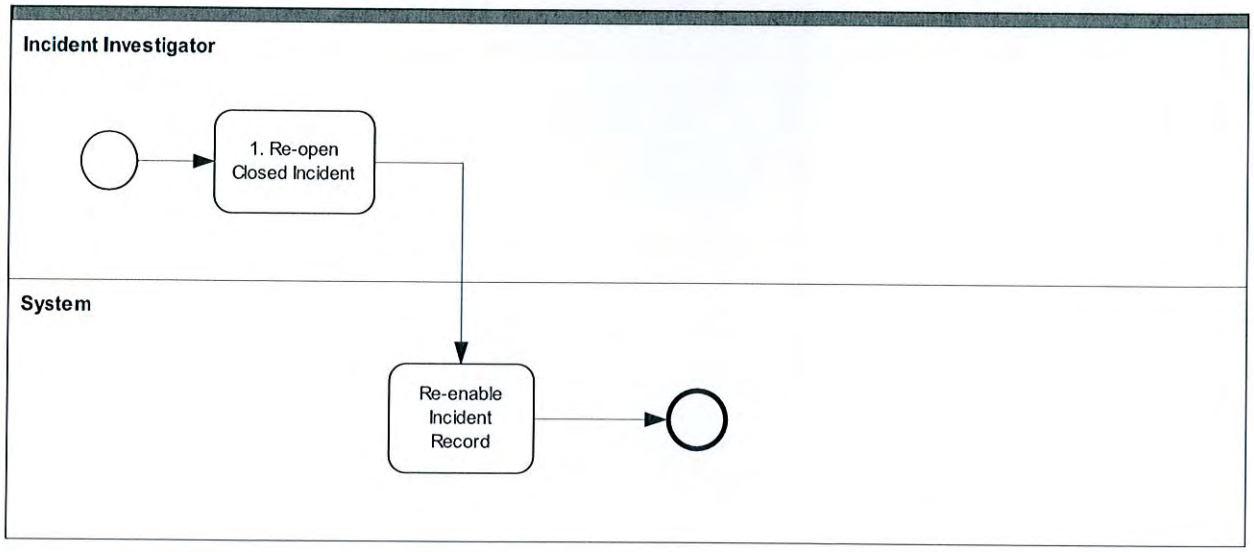
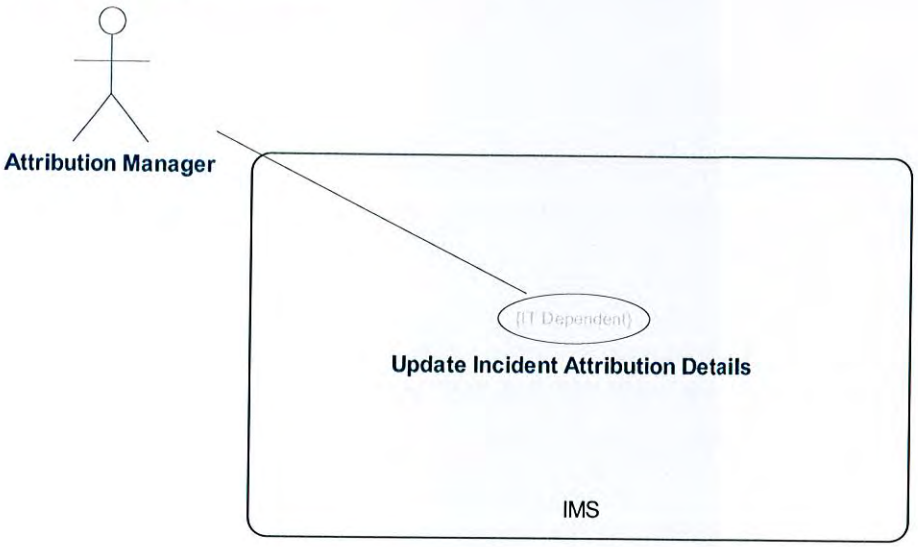
5.27.2 System Process Diagram



5.28 Update Incident Attribution Details

5.28.1 Use Case Specification



Aliases	
Description	Authorised user updates the Attribution Details for the Incident.
UID	IMS-UC-026
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident has been created. Incident Category selected includes Attribution requirement.
Postcondition	Attribution details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Attribution details for the Incident. 2. System saves updates made. 3. User views updated details.

	4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user. 2.1.2. Return to normal course 1. Data Validation Failed 2.2.1. User enters invalid data and submits the form. 2.2.2. System displays error message and highlights field in error. 2.2.3. Return to normal course 1.

Diagrams	
Links to Other	
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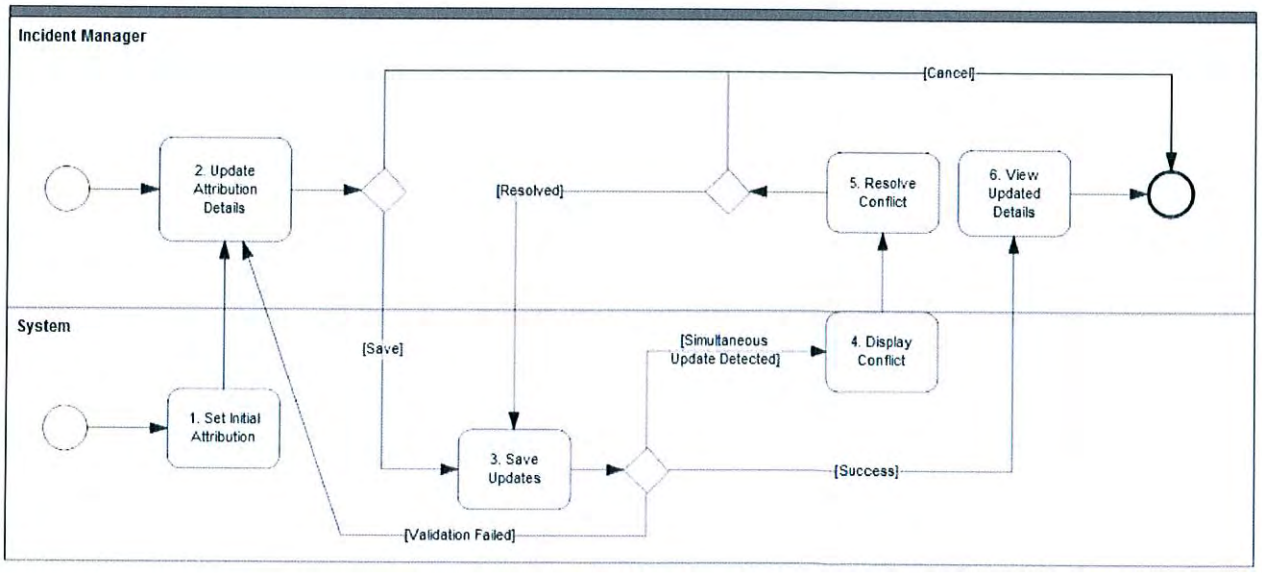
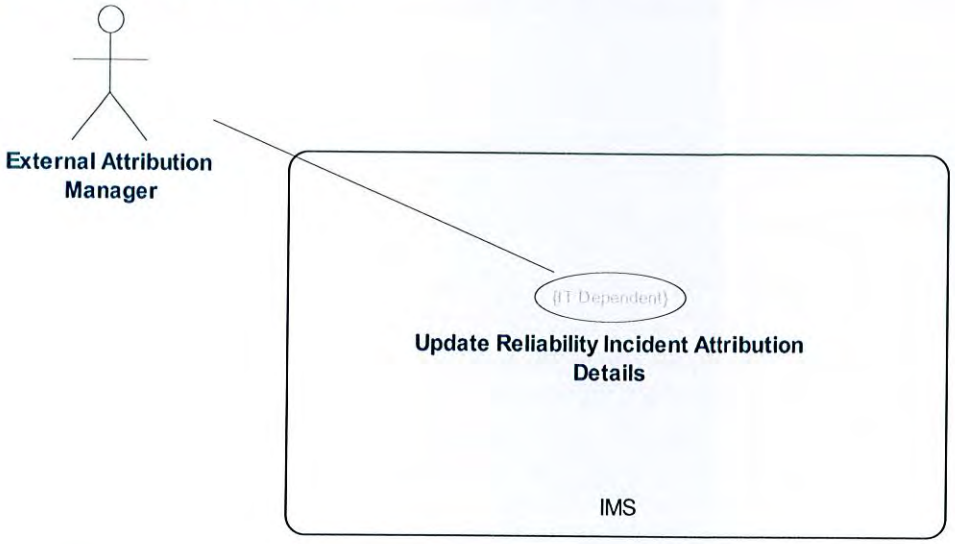
5.28.2 System Process Diagram



5.29 Update Reliability Incident Attribution Details

5.29.1 Use Case Specification



Aliases	
Description	Authorised user updates the Reliability Attribution details for the Incident.
UID	IMS-UC-043
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	IMS Incident Manager, Incident Investigator
Precondition	Incident has been created. Incident Category selected includes Reliability Attribution requirement.
Postcondition	Reliability Attribution details are recorded.
Questions/Notes	

Normal Course of Events	1. User updates Reliability Attribution details for the Incident. 2. System saves updates made. 3. User views updated details. 4. Exit Use Case.
Alternate Course of Events	Update Conflict 1.2.1. System identifies simultaneous update of Incident detail field and highlights conflicting information to the user. 1.2.2. User resolves conflict by selecting to retain a single update or merge the updates. 1.2.3. Return to normal course 2. Missing Mandatory 2.1.1. System identifies missing mandatory information and displays error message, highlighting the fields in error to the user.

	2.1.2. Return to normal course 3.

Diagrams	Update Incident Record
Links to Other	
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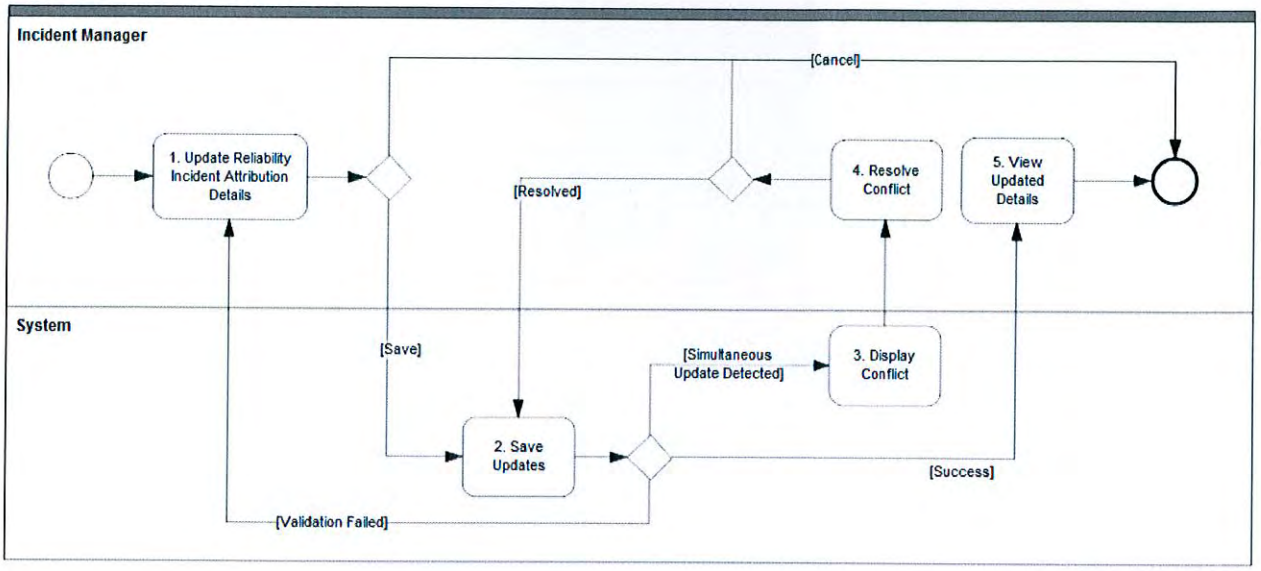
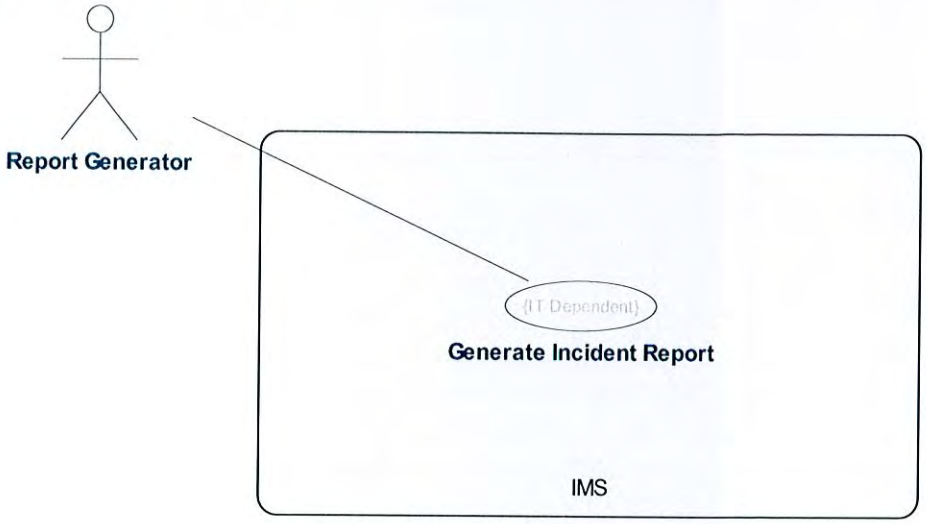
5.29.2 System Process Diagram



5.30 Generate Incident Report

5.30.1 Use Case Specification



Aliases	
Description	User generates an Incident report from the IMS.
UID	IMS-UC-027
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident record selected.
Postcondition	Incident details are output to selected file format.
Questions/Notes	

Normal Course of Events	1. User selects to export Incident to PDF report. 2. System generates report containing all details of the Incident record selected. 3. User selects location to save file and selects to save.

	4. System saves the file to the selected location. 5. Exit UC.
Alternate Course of Events	1.1.1. User selects to export incident to Excel report. 1.1.2. Return to normal course 2. 5.1.1. User selects to print an Incident report. 5.1.2. System sends details of selected Incident to the user-defined printer. 5.1.3. Exit UC.

Diagrams	
Links to Other	
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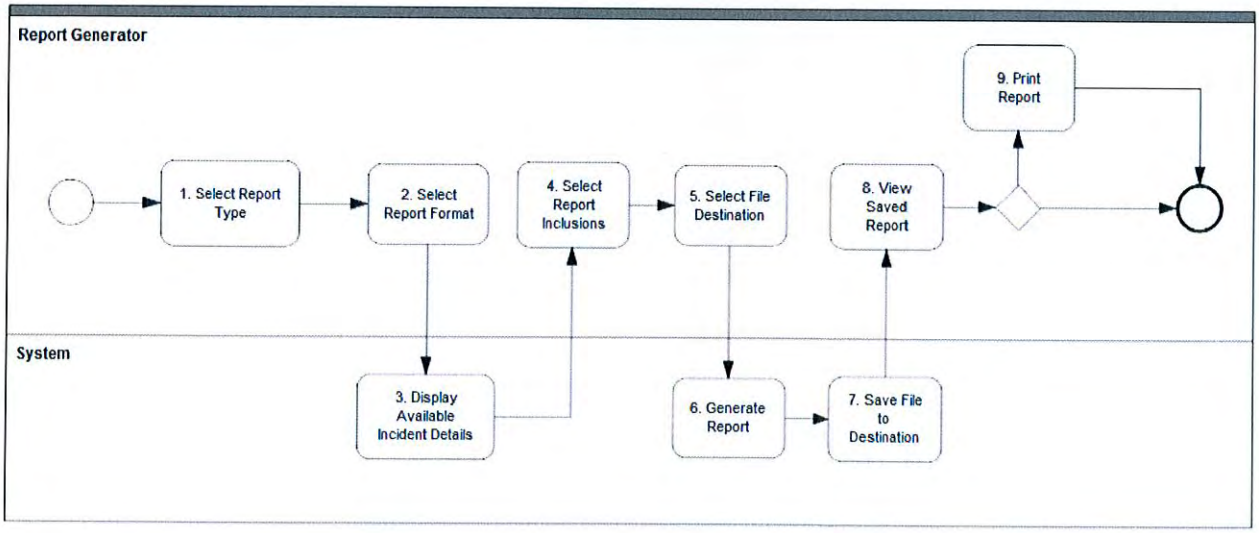
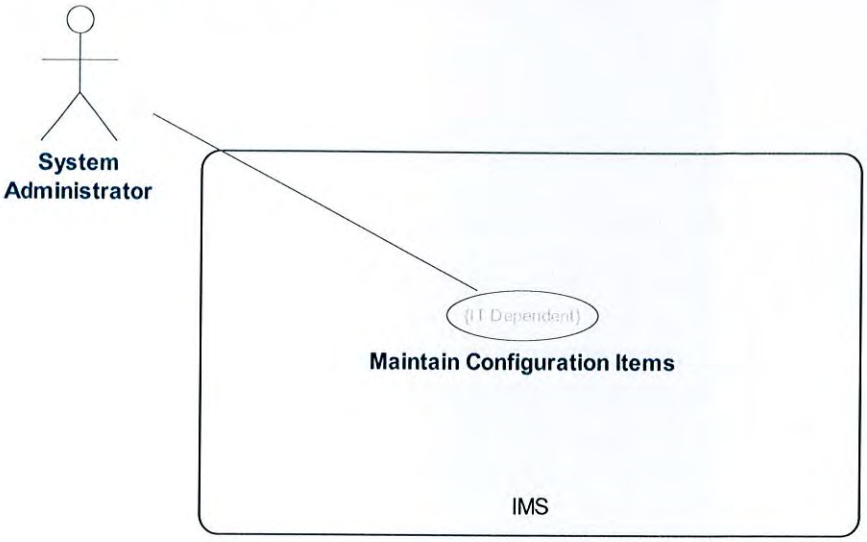
5.30.2 System Process Diagram



5.31 Maintain Configuration Items

5.31.1 Use Case Specification

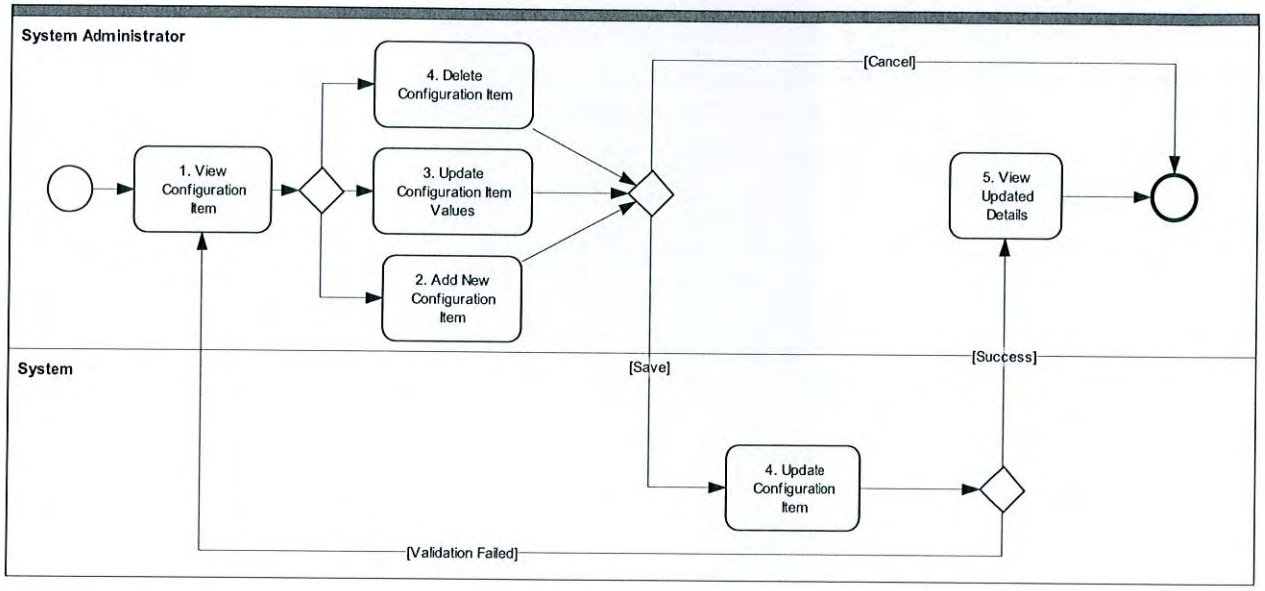


Aliases	
Description	The system administrator updates configurable settings within the system via UI.
UID	IMS-UC-044
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	System Administrator
Precondition	User has administration permissions.
Postcondition	Configurable data updated and made available within the system.
Questions/Notes	

Normal Course of Events	1. User selects to add a new value to a configuration item. 2. System displays entry fields. 3. User enters new value and saves. 4. System updates configuration item. 5. Exit Use Case.
Alternate Course of Events	Update Existing Value 1.1.1. User selects existing value to update. 1.1.2. Return to normal course 2. Delete Existing Value 1.2.1. User selects to remove existing value from configuration item. 1.2.2. Return to normal course 4.

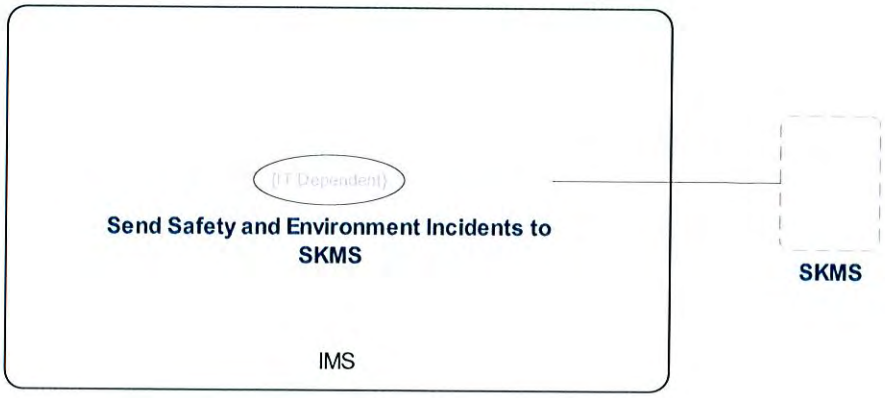
Diagrams	Maintain Configuration List
Links to Other	
Last modified	amathews 09/11/15 02:42:32 PM

5.31.2 System Process Diagram



5.32 Send Safety and Environment Incidents to SKMS

5.32.1 Use Case Specification



Aliases	

Description	This use case descries electronically sending the Incident details to SKMS System. Authorised IMS user Creates an Incident in IMS with necessary details and allocates appropriate categorisation. System then automatically sends Incident to SKMS system for further root cause analysis and reporting based on the agreed frequency and rules.
UID	IMS-UC-028
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident with correct classification has been created in IMS.
Postcondition	Safety / Environment related Incidents are successfully sent to SKMS.
Questions/Notes	

Normal Course of Events	1. User creates Incident in IMS. 2. System selects all Incidents Impacting Safety/ Environment 3. System sends Incidents to SKMS. 4. System receives successful confirmation. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 4.1.1. System receives error message that send interaction is unsuccessful. 4.1.2. Return to normal course 3.

Diagrams	
Links to Other	
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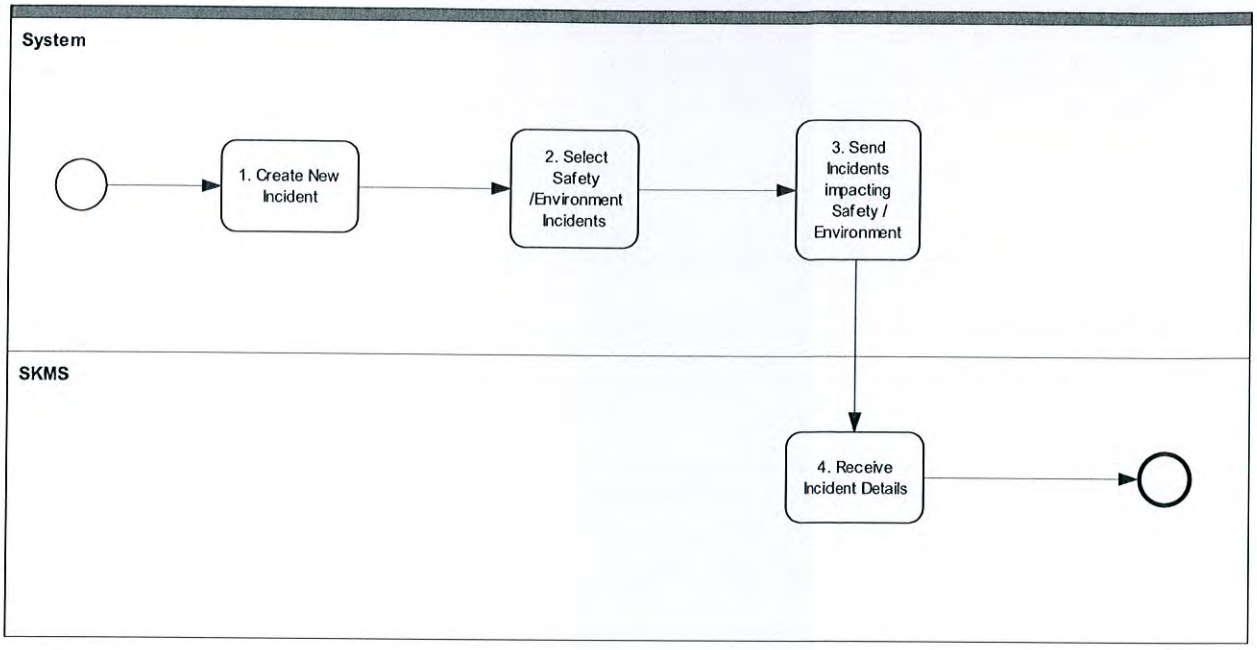
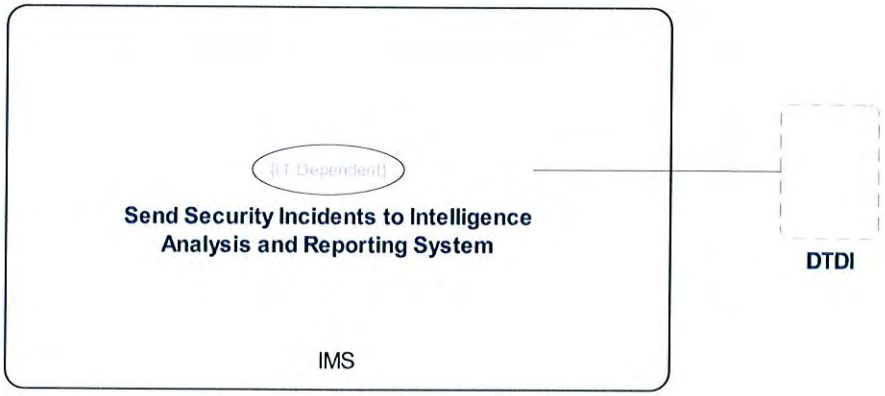
5.32.2 System Process Diagram



5.33 Send Security Incidents to Intelligence Analysis and Reporting System

5.33.1 Use Case Specification



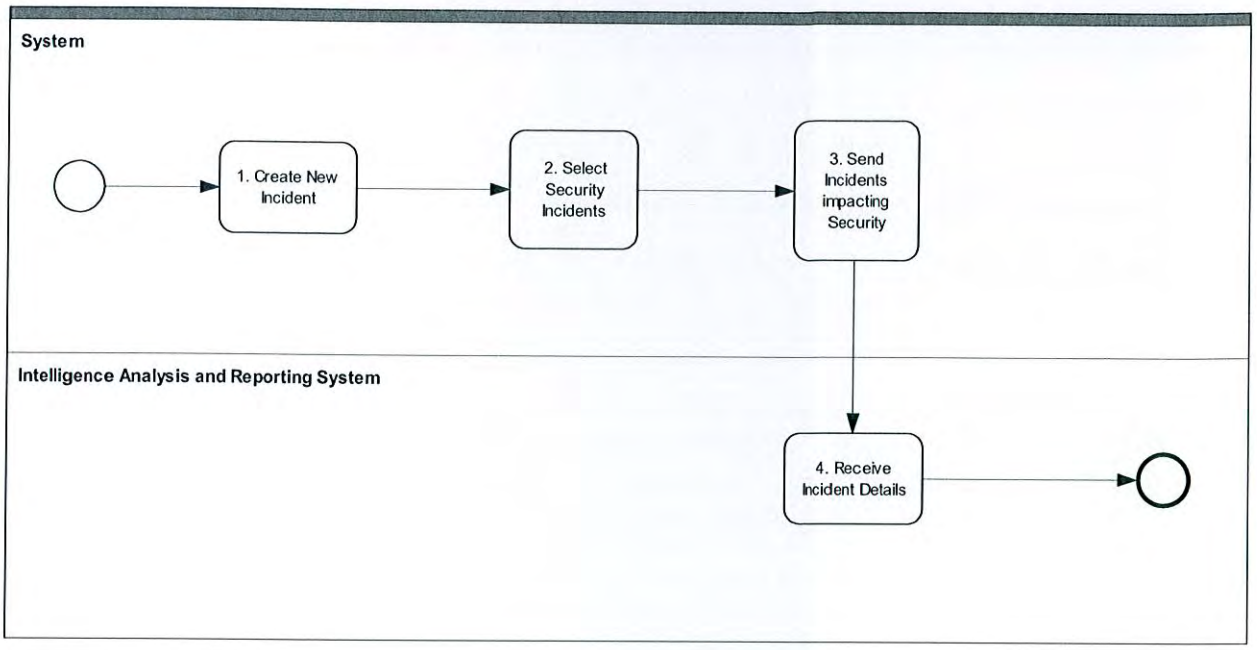
Aliases	
Description	This use case descries electronically sending an Incident details to Intelligence Analysis and Reporting System. Authorised IMS user Creates an Incident in IMS and allocates appropriate categorization as well as fills in the necessary Incident Information. System then automatically sends Security Incident to Intelligence Analysis and Reporting System.
UID	IMS-UC-029
Abstract/Partial	false

Decision Point	false
Inherits	
Actors	
Precondition	Incident with correct classification has been created in IMS.
Postcondition	Security related Incidents are successfully sent to Intelligence Analysis and Reporting System.
Questions/Notes	

Normal Course of Events	1. User creates Incident in IMS. 2. System selects Incident associated with the Security Category 3. IMS System sends Security Incident details with necessary details to Intelligence Analysis and Reporting System. 4. Intelligence Analysis and Reporting System receives successful confirmation. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 4.1.1. System receives error message that send interaction is unsuccessful. 4.1.2. Return to normal course 3.

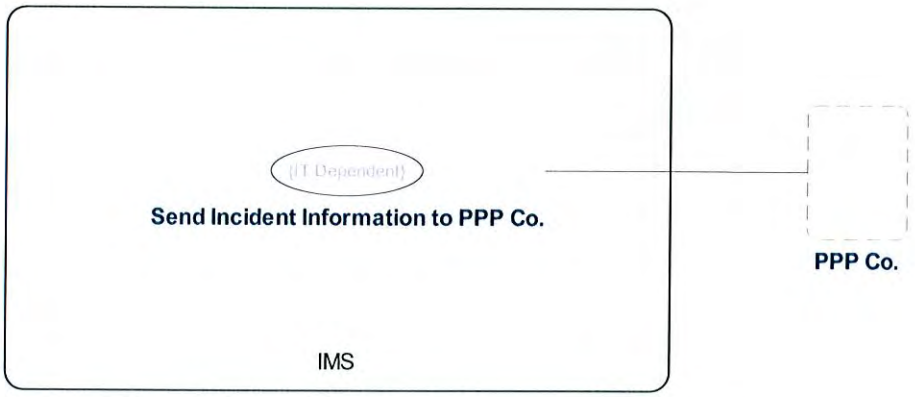
Diagrams	
Links to Other	
Last modified	amathews 08/11/15 07:01:42 PM

5.33.2 System Process Diagram



5.34 Send Incident Information to PPP Co.

5.34.1 Use Case Specification



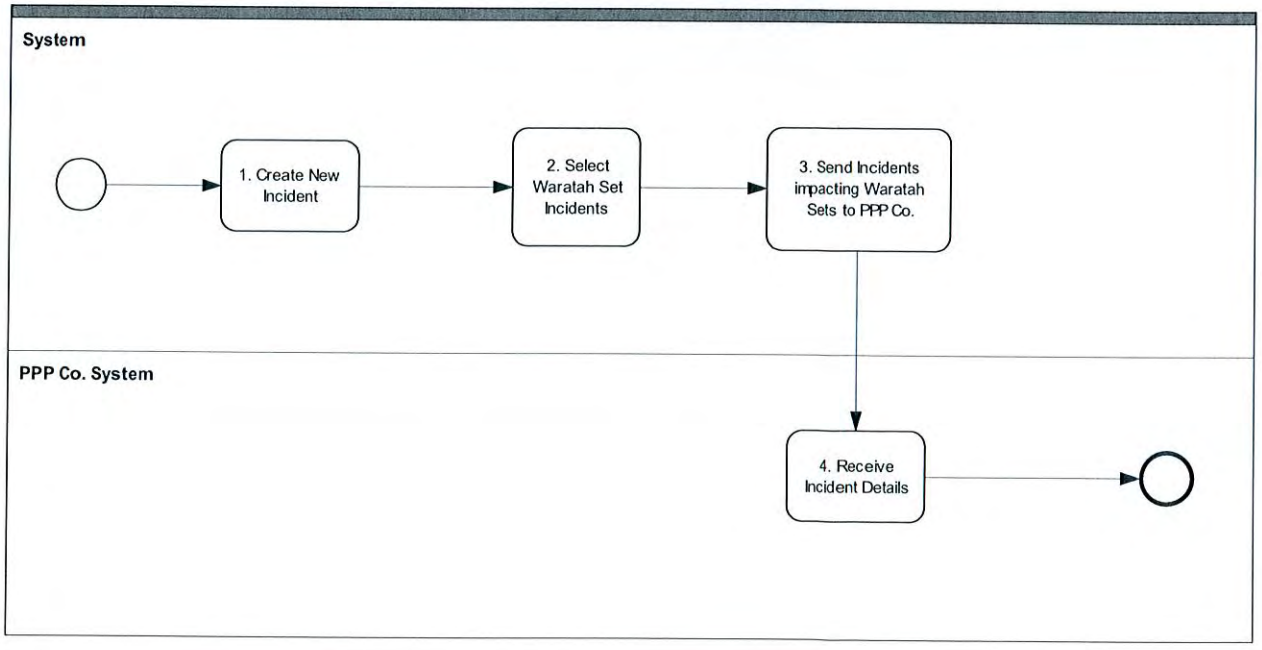
Aliases	
Description	This use case descries electronically sending the Incident Information from IMS to PPP Co Incident Management System. All subsequent updates to the incident information should also be sent to PPP Co IMS.
UID	IMS-UC-030
Abstract/Partial	false
Decision Point	false
Inherits	

Actors	
Precondition	Incident with correct classification has been created in IMS. Incident meets predefined business rules and criteria to identify Incident are related to Waratah set
Postcondition	Incident record is successfully received by PPP Co. IMS.
Questions/Notes	

Normal Course of Events	1. Incident involving the Waratah fleet has been created or updated. 2. System sends finalised Waratah Incident to Reliance Rail. 3. System receives successful confirmation. 4. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 3.1.1. System receives error message that send interaction is unsuccessful. 3.1.2. Return to normal course 3.

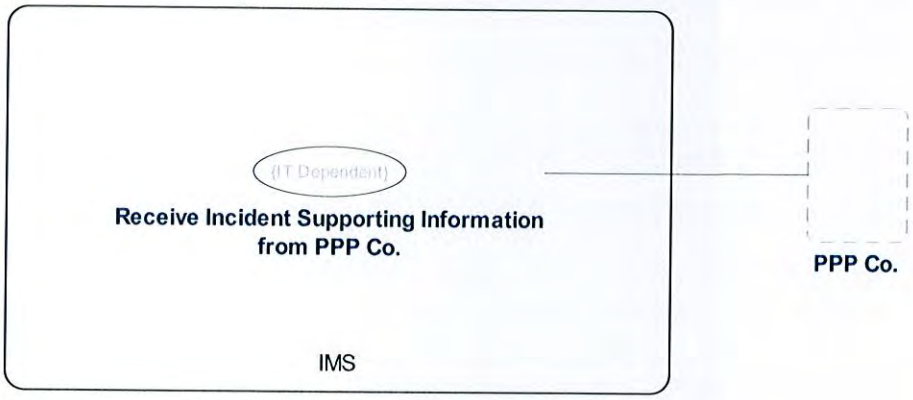
Diagrams	
Links to Other	
Last modified	amathews 08/11/15 07:01:42 PM

5.34.2 System Process Diagram



5.35 Receive Incident Supporting Information from PPP Co.

5.35.1 Use Case Specification



Aliases	
Description	This use case describes electronically receiving the Incident supporting Information from the PPP Co Incident Management System in support of Initial Reliability Attribution. Information sent includes reports, documents and Images.
UID	IMS-UC-031
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Supporting Incident Information has been updated and associated evidence has been uploaded to the PPP Co-IMS system.
Postcondition	Incident Supporting Information has been received from PPP Co-IMS. Information has been populated in IMS, Supporting documents are stored and links have been populated in IMS
Questions/Notes	

Normal Course of Events	1. PPP Co-IMS sends supporting Incident attribution Information to IMS. 2. IMS receives supporting information for the Reliability Incident Attribution 3. System stores all attached documents, Populates links and other information IMS 4. System sends conformation of receipt 5. Exit Use Case.
Alternate Course of Events	Receive Interaction Failed 4.1.1. System receives error message that receive interaction is unsuccessful. 4.1.2. Return to normal course 2.

Diagrams	
Links to Other	
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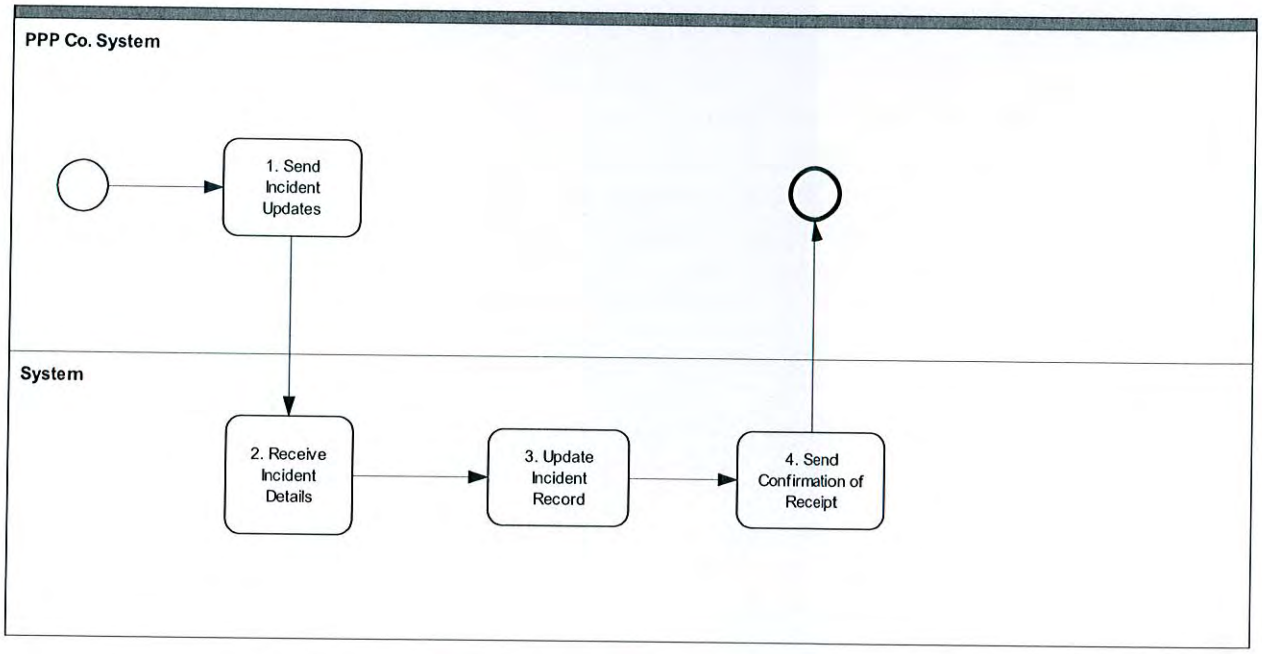
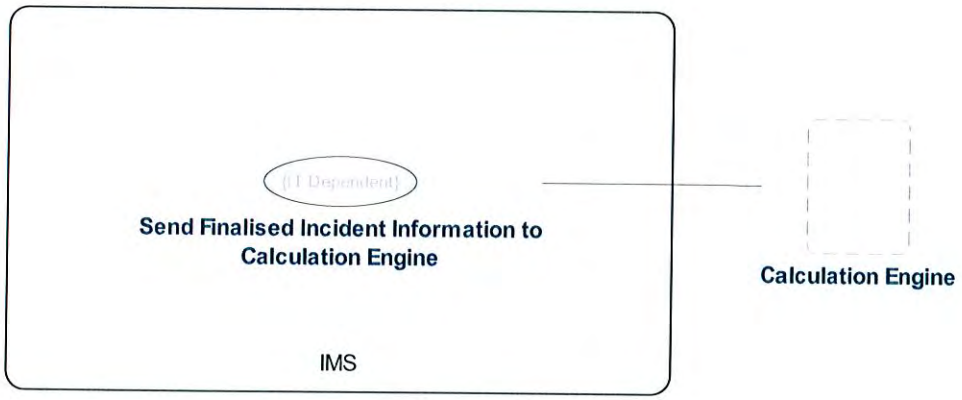
5.35.2 System Process Diagram



5.36 Send Finalised Incident Information to Calculation Engine

5.36.1 Use Case Specification



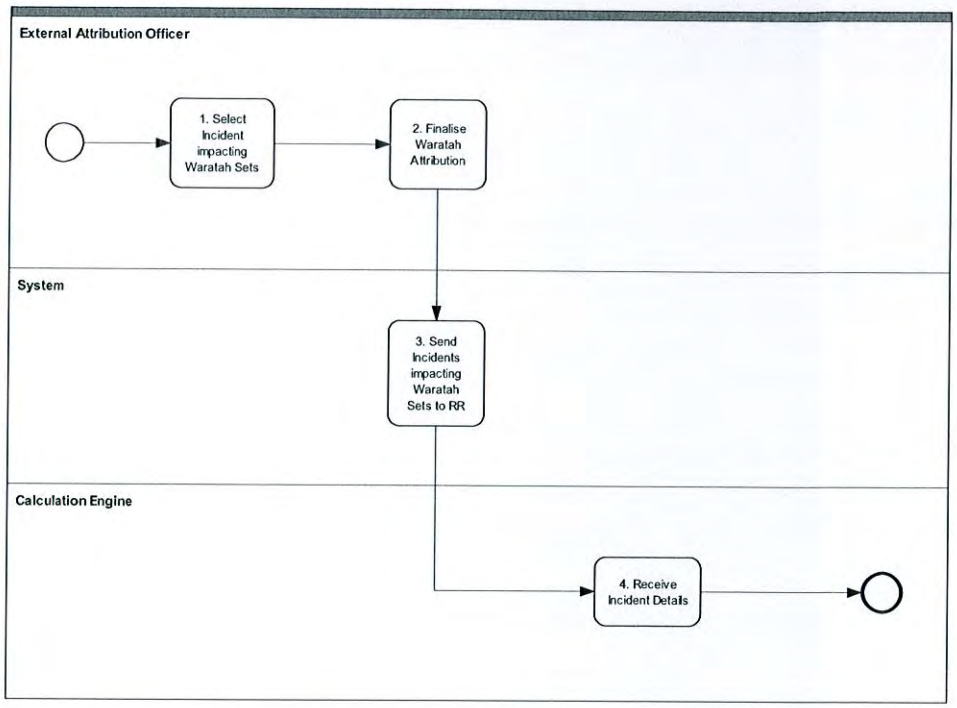
Aliases	
Description	This use case descries electronically sending the finalised Incident details to Calculation Engine

	System. External Attribution Officer performs the reliability attribution process in where user agrees on the responsible party for an incident in accordance with PPP contract with Reliance Rail. External Attribution Officer performs Incident finalisation process for each incident for the month. Once Incidents are finalised they are sent to the calculation engine for the calculating monthly payment impacts.
UID	IMS-UC-032
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident with correct classification has been created in IMS. Incident meets predefined business rules and criteria to identify Incident are related to Waratah set. Waratah reliability attribution and Finalisation process has been completed in IMS.
Postcondition	Finalised Waratah Incidents are available for calculations in the Calculation Engine
Questions/Notes	

Normal Course of Events	1. Incident is created in IMS and supporting information for the Reliability Incident Attribution has been received. 2. User finalises Waratah Incident attribution. 3. System sends finalised Waratah Incident to Calculation engine. 4. System receives successful confirmation. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 4.1.1. System receives error message that send interaction is unsuccessful. 4.1.2. Return to normal course 3.

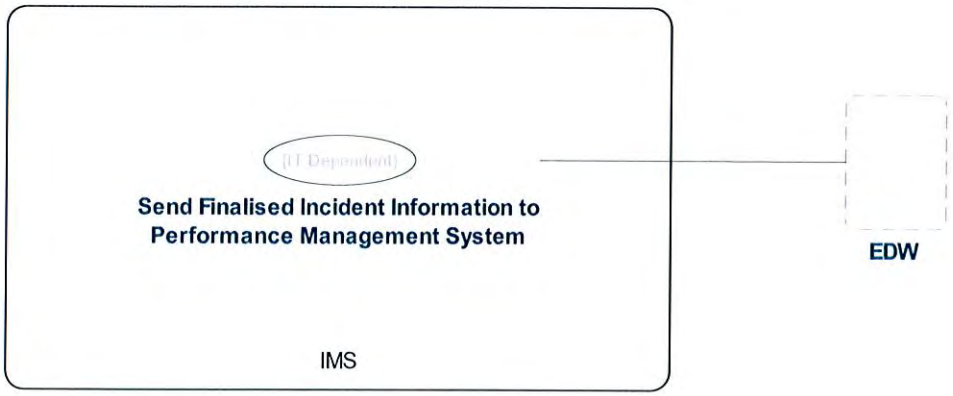
Diagrams	
Links to Other	
Last modified	amathews 08/11/15 07:01:42 PM

5.36.2 System Process Diagram



5.37 Send Finalised Incident Information to Performance Management System

5.37.1 Use Case Specification



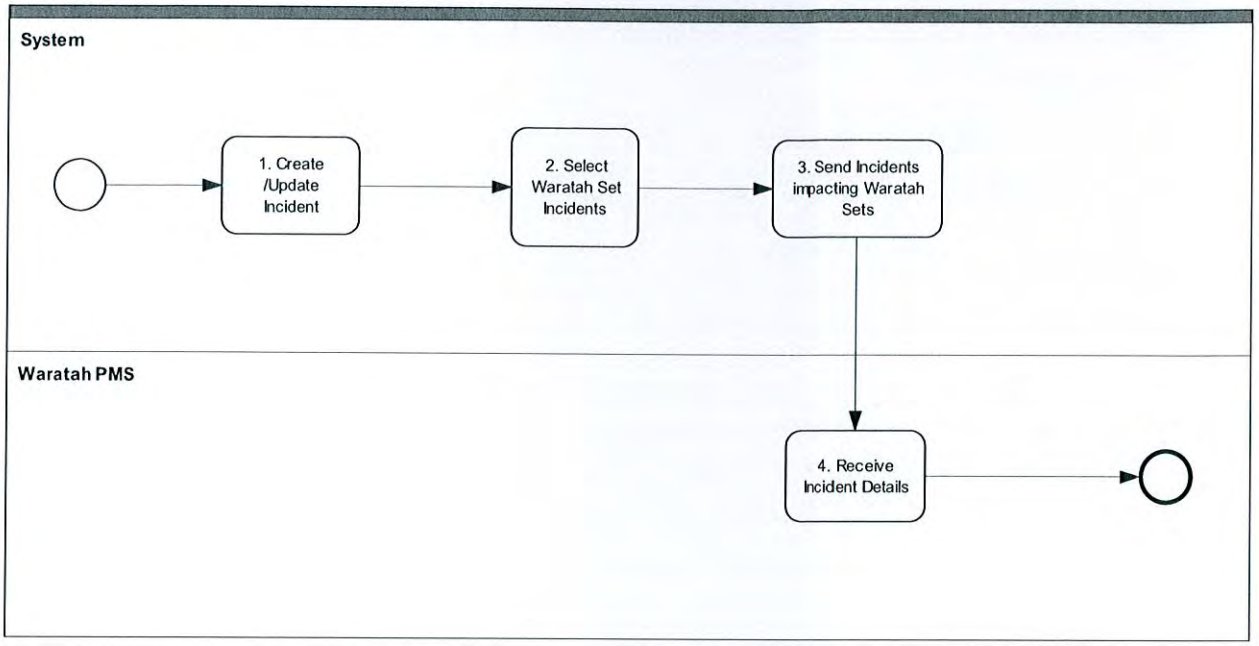
Aliases	
Description	This use case descries electronically sending the Incident details to EDW for the purpose of Performance Management System Reporting for the Waratah fleet. All finalised Waratah Incidents are sent end of the day.
UID	IMS-UC-033

Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident with correct set number has been created or updated in IMS to identify Incident are related to Waratah set. Incident Reliability Attribution for the Waratah Incident has been finalised in IMS.
Postcondition	Waratah set related incident records are received in PMS and Waratah Contract Management team can perform necessary performance reporting
Questions/Notes	

Normal Course of Events	1. Incident is created / Updated in IMS. 2. User finalises Waratah Incident attribution. 3. System sends finalised Waratah Incident to PMS 4. System receives successful confirmation. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed System receives error message that send interaction is unsuccessful. Return to normal course 3.

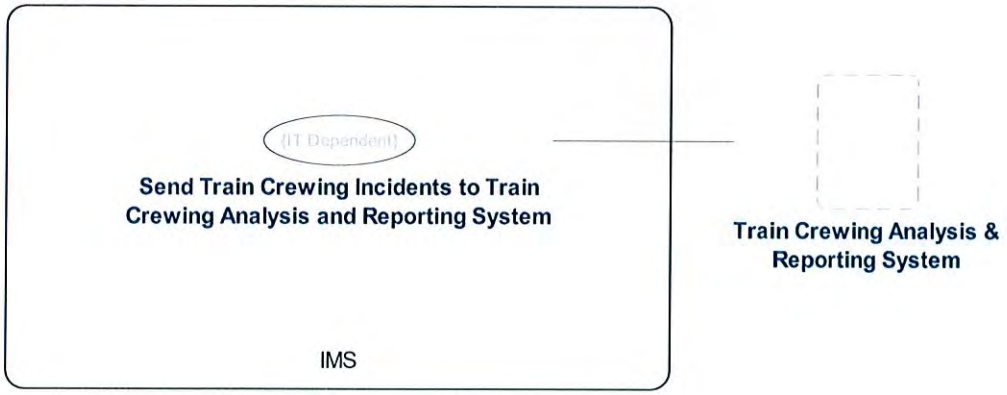
Diagrams	
Links to Other	
Last modified	amathews 08/11/15 07:01:42 PM

5.37.2 System Process Diagram



5.38 Send Train Crewing Incidents to Train Crewing Analysis and Reporting System

5.38.1 Use Case Specification



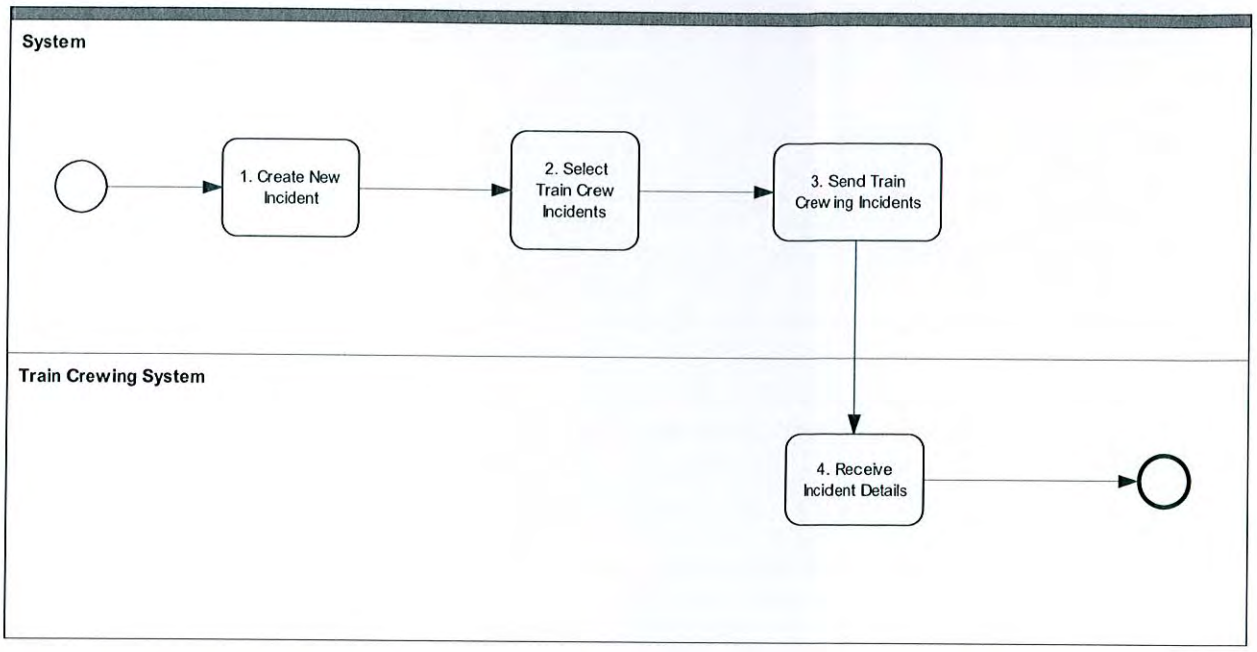
Aliases	
Description	This use case descries electronically sending the Incident details to Train Crewing Analysis and Reporting System. Authorised IMS user Creates an Incident in IMS with necessary details and allocates appropriate categorisation. For all Train crewing related Incidents , once post incident attribution and Root cause has been established , System automatically sends Incident to TC SharePoint system for further reporting and corrective actions management
UID	IMS-UC-034
Abstract/Partial	false

Decision Point	false
Inherits	
Actors	
Precondition	Incident with correct classification has been created in IMS, root cause has been established.
Postcondition	Incidents involving Train Crewing has been successfully sent to Train Crewing Analysis and Reporting System.
Questions/Notes	

Normal Course of Events	1. User creates Incident in IMS. 2. System selects all Incidents Impacting Train Crewing 3. System sends Incidents to Train Crewing Analysis and Reporting System. 4. System receives successful confirmation. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 4.1.1. System receives error message that send interaction is unsuccessful. 4.1.2. Return to normal course 3.

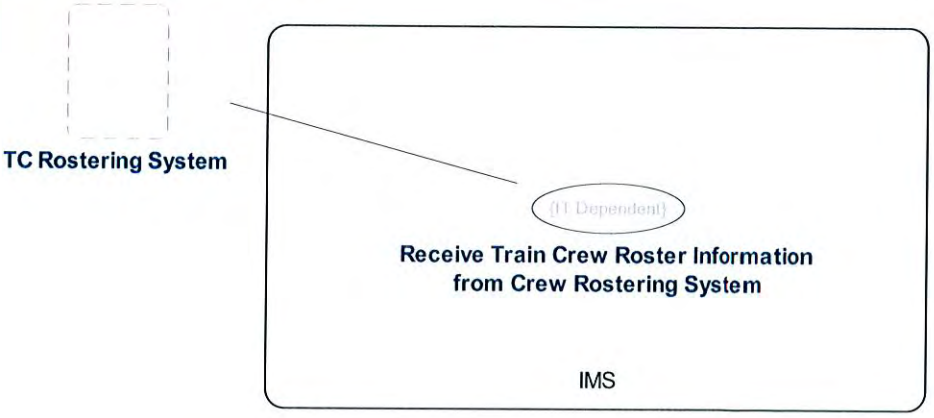
Diagrams	
Links to Other	
Last modified	amathews 08/11/15 07:01:42 PM

5.38.2 System Process Diagram



5.39 Receive Train Crewing Roster Information from Crew Rostering System

5.39.1 Use Case Specification



Aliases	
Description	This use case descries electronically receiving the Train Drivers and Guard's Planned and/or standby roster information.
UID	IMS-UC-035
Abstract/Partial	false
Decision Point	false
Inherits	

Actors	
Precondition	Planned and /or standby roster is updated in Crew Rostering System
Postcondition	Rostering Information has been received from Crew Rostering System in IMS
Questions/Notes	

Normal Course of Events	1. Crew Rostering System system sends rostering information to IMS. 2. IMS receives up-to-date Train Crew Rostering information 3. System stores rostering information in IMS 4. System sends conformation of receipt 5. Exit Use Case.
Alternate Course of Events	Receive Interaction Failed 4.1.1. System receives error message that receive interaction is unsuccessful. 4.1.2. Return to normal course 2.

Diagrams	
Links to Other	
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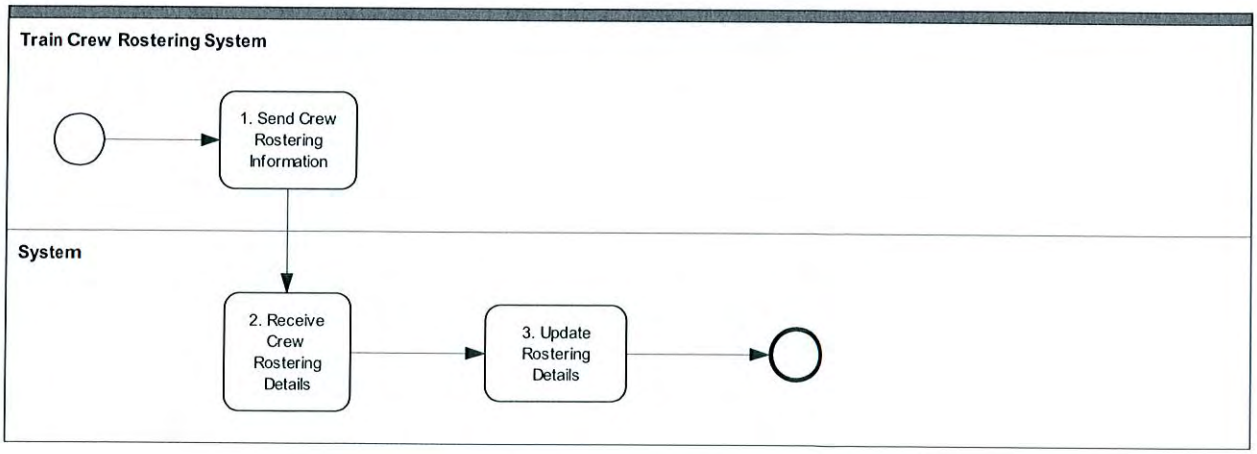
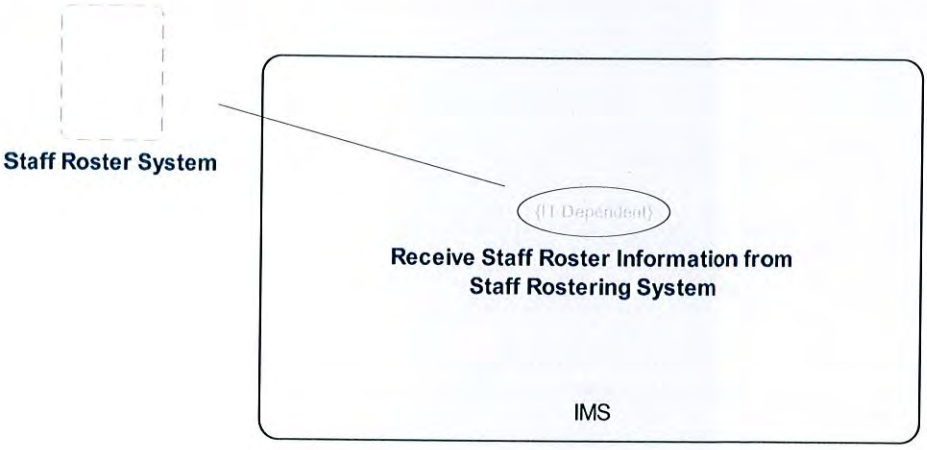
5.39.2 System Process Diagram



5.40 Receive Staff Roster Information from Staff Rostering System

5.40.1 Use Case Specification



Aliases	
Description	This use case descries electronically receiving the Staff (Station, Signal) Planned and/or standby roster information.
UID	IMS-UC-036
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Planned and /or standby roster is updated in Staff Rostering System
Postcondition	Rostering Information has been received from Staff Rostering System in IMS
Questions/Notes	

Normal Course of Events	1. Staff Rostering System system sends rostering information to IMS. 2. IMS receives up-to-date Staff Rostering information 3. System stores all rostering information IMS 4. System sends conformation of receipt 5. Exit Use Case.
Alternate Course of Events	Receive Interaction Failed 4.1.1. System receives error message that receive interaction is unsuccessful. 4.1.2. Return to normal course 2.

Diagrams	
Links to Other	

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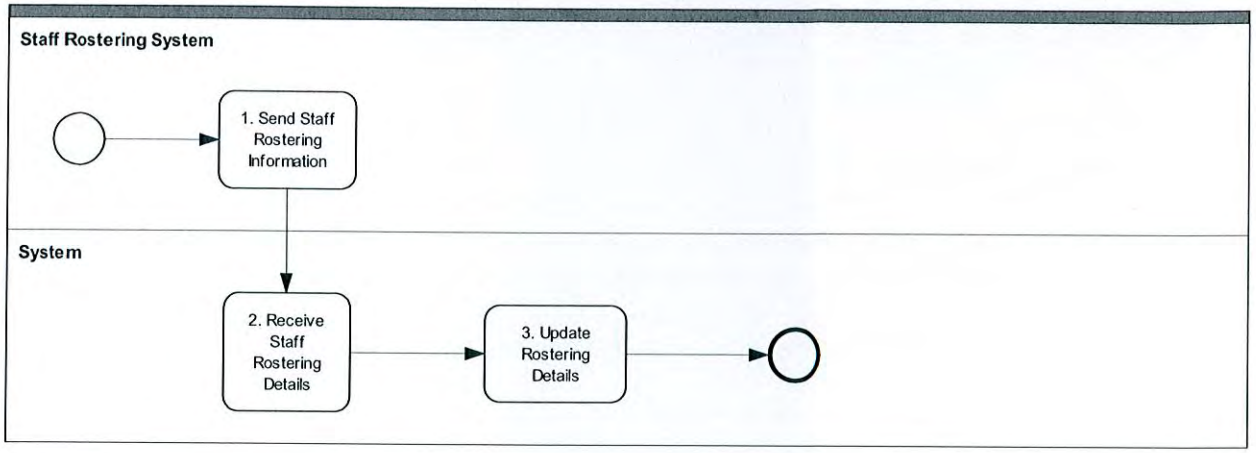
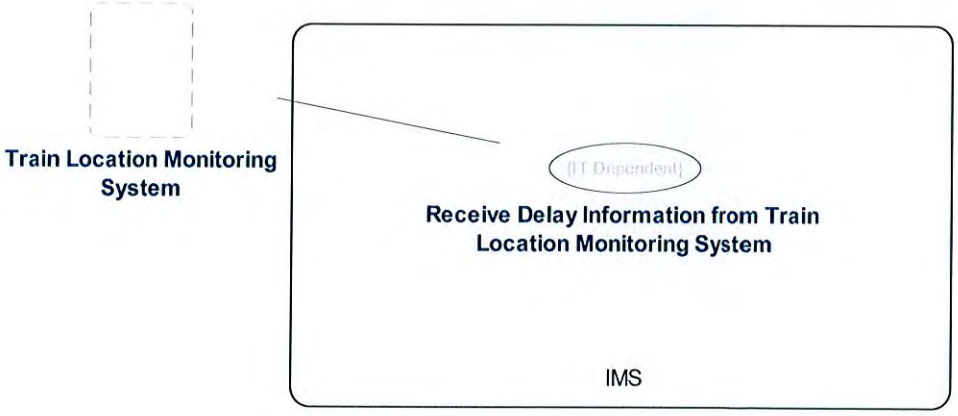
5.40.2 System Process Diagram



5.41 Receive Delay Information from Train Location Monitoring System

5.41.1 Use Case Specification



Aliases	
Description	This use case descries electronically receiving the notification of the outstanding delays for the delayed trips delayed trips from the Train Monitoring System. Based on the business rules, the Train Monitoring System will send/push details of the Trips and associated delay to IMS if Trip has been identified as a delayed trip with the outstanding delay. IMS system will then send associated notification id once the notification has been created. If notification gets converted to an incident in IMS, associated Incident reference against an outstanding delay /delayed trip as well as required Incident details will be sent to the Train Monitoring System electronically.
UID	IMS-UC-037
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	
Precondition	Trip has been delayed and has outstanding delay to be resolved in Train Monitoring System. Delayed trip has not been associated with notification in IMS.
Postcondition	IMS received notification of the delay, creates notification and sends associated notification Identifier.
Questions/Notes	

Normal Course of Events	1. Trip has identified as delayed trip with the outstanding delays in the Train Monitoring System 2. Train Monitoring System automatically sends impacted trip and associated delay information to IMS 3. IMS receives delayed trip details and delay details, creates notification report. 4. System sends notification Identifier back to Train Monitoring System 5. Exit Use Case.
Alternate Course of Events	Receive Interaction Failed 3.1.1. System receives error message that receive interaction is unsuccessful. 3.1.2. Return to normal course 2.

Diagrams	
Links to Other	
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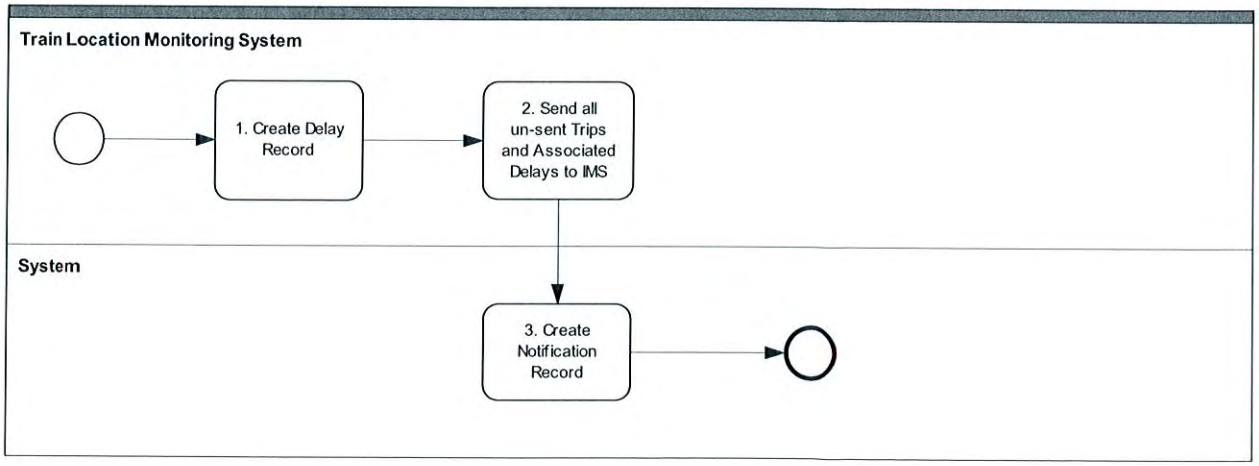
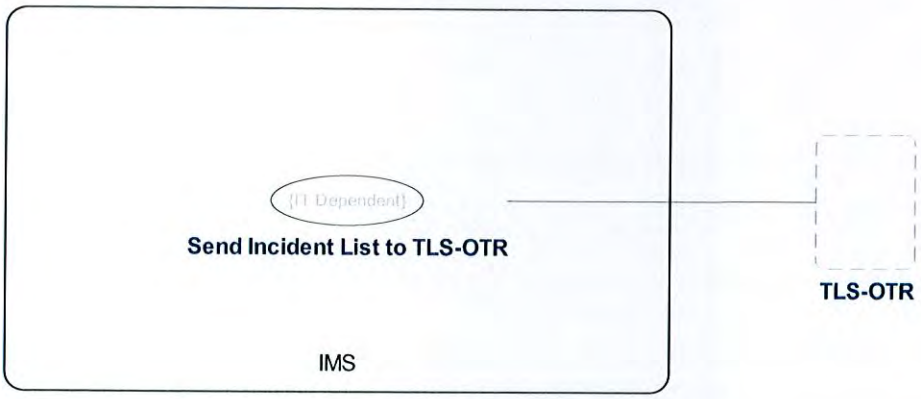
5.41.2 System Process Diagram



5.42 Send Incident Details to Train Location Monitoring System

5.42.1 Use Case Specification



Aliases	
Description	This use case describes sending incident details associated with outstanding delayed trips to the Train Location Monitoring System.
UID	IMS-UC-038
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Notification received from Train Location Monitoring System has been converted to an Incident in IMS.
Postcondition	Incident and required Incident details are populated and mapped to the delay in Train Location Monitoring System.
Questions/Notes	

Normal Course of Events	1. Incident manager associates /creates Incident with notification received from Train Location Monitoring system. 2. IMS Sends Incident details to Train Location Monitoring system 3. Train Location Monitoring system receives Incident Details and associates them to the delayed Trip/outstanding delay, sending conformation of receipt. 4. Exit Use Case.
Alternate Course of Events	Receive Interaction Failed 4.1.1. System receives error message that receive interaction is unsuccessful. 4.1.2. Return to normal course 2.

Diagrams	

Links to Other	
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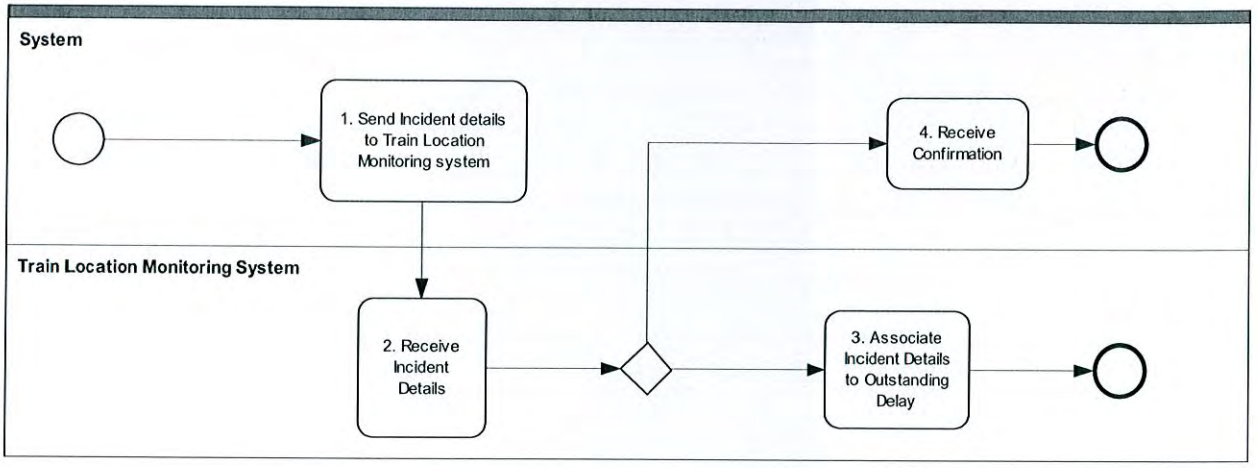
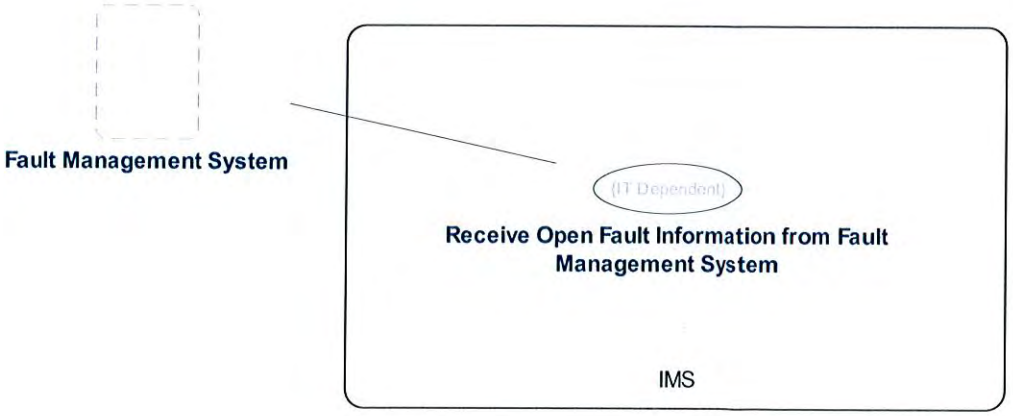
5.42.2 System Process Diagram



5.43 Receive Open Fault Information from Fault Management System

5.43.1 Use Case Specification



Aliases	
Description	This use case descries electronically receiving the list of faults for the selected set from Fault Management System. User has ability to correlate existing fault to an incident based on the waratah set involved in the Incident. This process is mainly followed for the Waratah set related Incidents and used in the reliability attribution finalisation process.

UID	IMS-UC-039
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident on the Waratah Set has been populated in IMS for the selected Incident.
Postcondition	System shows all faults on the set and users selects to correlate one fault with an Incident.
Questions/Notes	

Normal Course of Events	1. User selects to look up available faults on the set involved in the Incidents. 2. IMS receives list of open faults on the associated set. 3. System sends conformation of receipt 4. Exit Use Case.
Alternate Course of Events	Receive Interaction Failed 3.1.1. System receives error message that receive interaction is unsuccessful. 3.1.2. Return to normal course 2.

Diagrams	
Links to Other	
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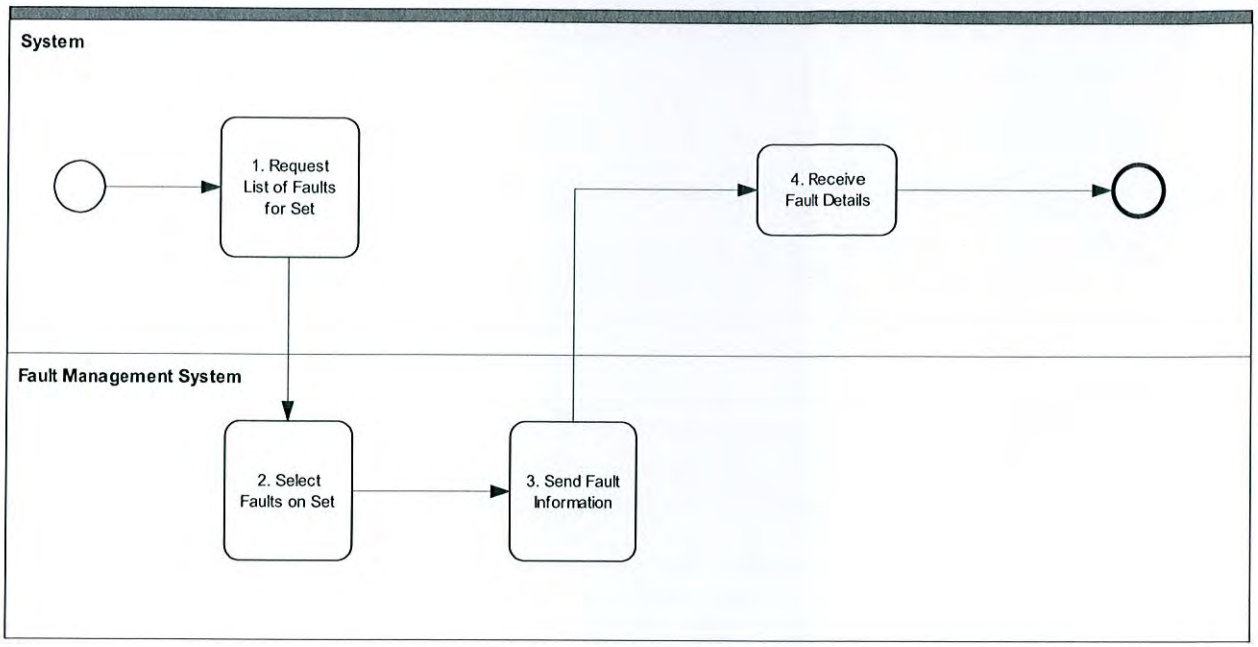
5.43.2 System Process Diagram



5.44 Send Fleet Related Incidents to Fault Management System

5.44.1 Use Case Specification

Aliases	
Description	This use case descries electronically sending all Fleet related Incident details and Incident Attribution details to Fault Management System. Once post incident attribution and Root cause has been established, System should automatically send Incident and attribution details of all Feet attributed Incidents to Fault Management System for further analysis. reporting and corrective actions management.
UID	IMS-UC-040
Abstract/Partial	false
Decision Point	false

Inherits	
Actors	
Precondition	Incident with correct classification has been created in IMS, root cause has been established.
Postcondition	Incidents involving Fleet has been successfully sent to Fault Management System.
Questions/Notes	

Normal Course of Events	1. User creates Incident in IMS. 2. System selects all Incidents related to and attributed to Fleet. 3. System sends Incidents to Fault Management System. 4. System receives successful confirmation. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 4.1.1. System receives error message that send interaction is unsuccessful. 4.1.2. Return to normal course 3.

Diagrams	
Links to Other	
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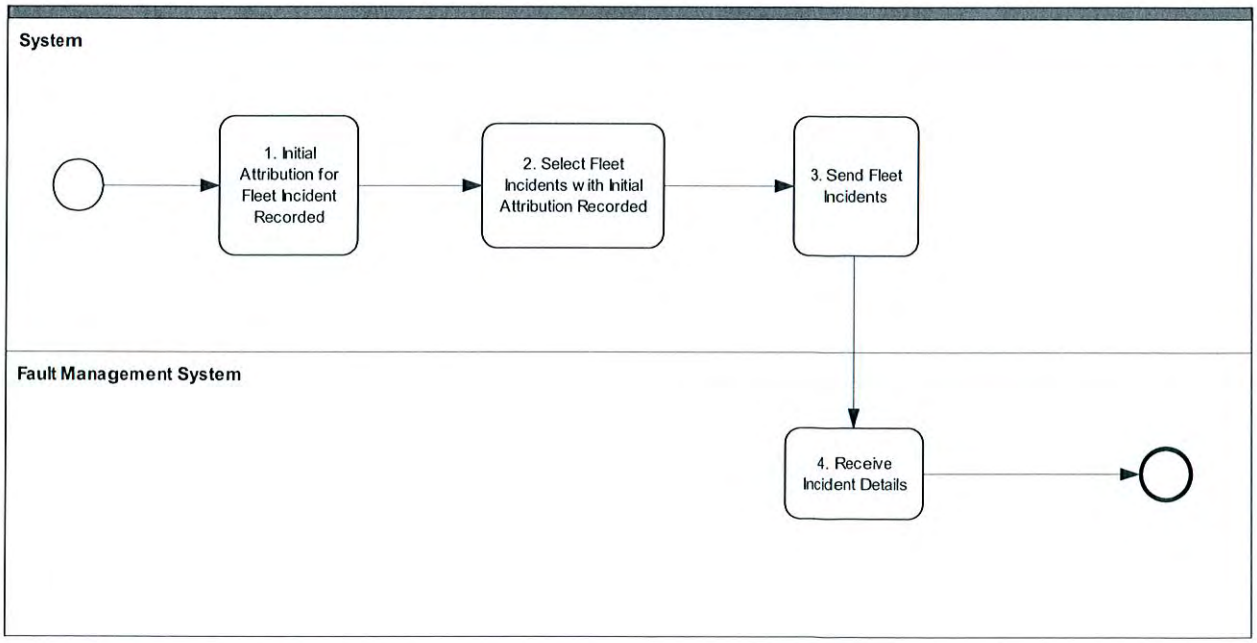
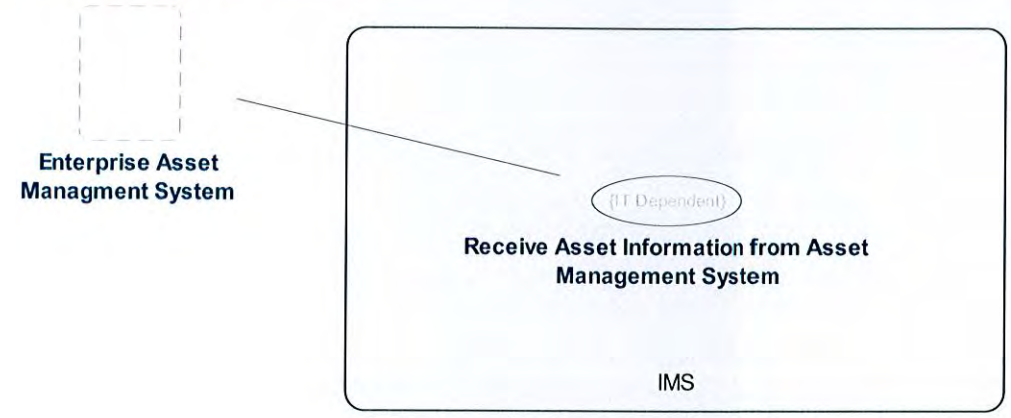
5.44.2 System Process Diagram



5.45 Receive Asset Information from Asset Management System

5.45.1 Use Case Specification



Aliases	
Description	This use case descries electronically receiving the Asset Information as required for the operational Incident Management.
UID	IMS-UC-041
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident related to asset is created in IMS
Postcondition	Asset Information has been received and populated in IMS.
Questions/Notes	

Normal Course of Events	1. IMS requests asset information associated with Set or other asset involved in an Incident. 2. IMS receives requested asset information 3. System stores asset information 4. System sends conformation of receipt 5. Exit Use Case.
Alternate Course of Events	Receive Interaction Failed 4.1.1. System receives error message that receive interaction is unsuccessful. 4.1.2. Return to normal course 2.

Diagrams	
Links to Other	

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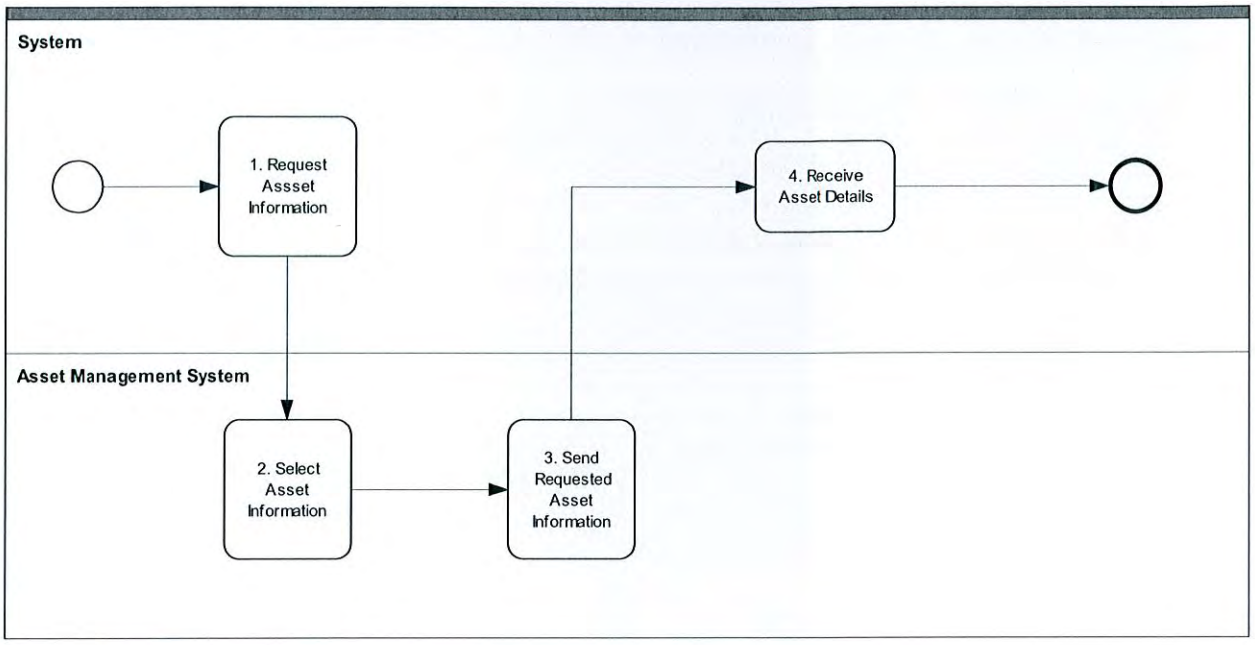
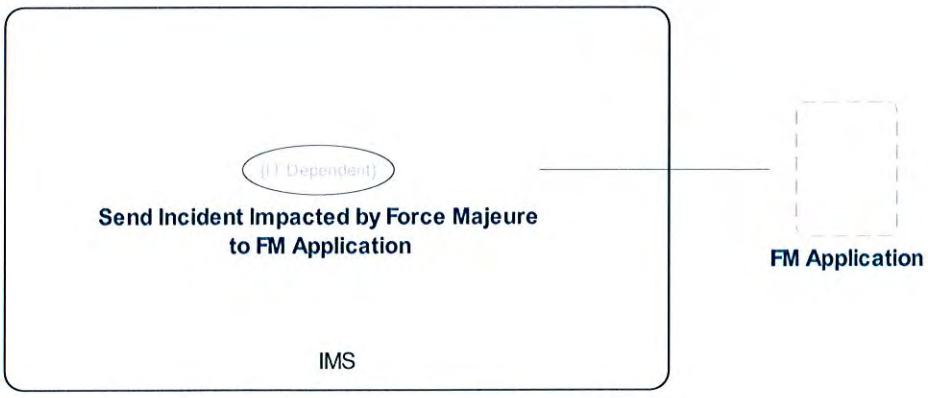
5.45.2 System Process Diagram



5.46 Send Incident Details to Force Majeure Application

5.46.1 Use Case Specification



Aliases	
Description	This use case descries electronically sending the Incident details of Incident impacted by Force Majeure to Force Majeure application.
UID	IMS-UC-048
Abstract/Partial	false

Decision Point	false
Inherits	
Actors	FM Application
Precondition	Incidents impacted by Force Majeure are flagged in IMS
Postcondition	FM application received incident details of Incidents impacted by Force Majeure.
Questions/Notes	

Normal Course of Events	1. Incident is attributed to Force Majeure. 2. System sends all Incidents impacted by Force Majeure to FM system. 3. System receives successful confirmation 4. FM system processes further work flow. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 3.1.1. System receives error message that send interaction is unsuccessful. 3.1.2. Return to normal course 3.

Diagrams	Send Incident Details to FM Application
Links to Other	
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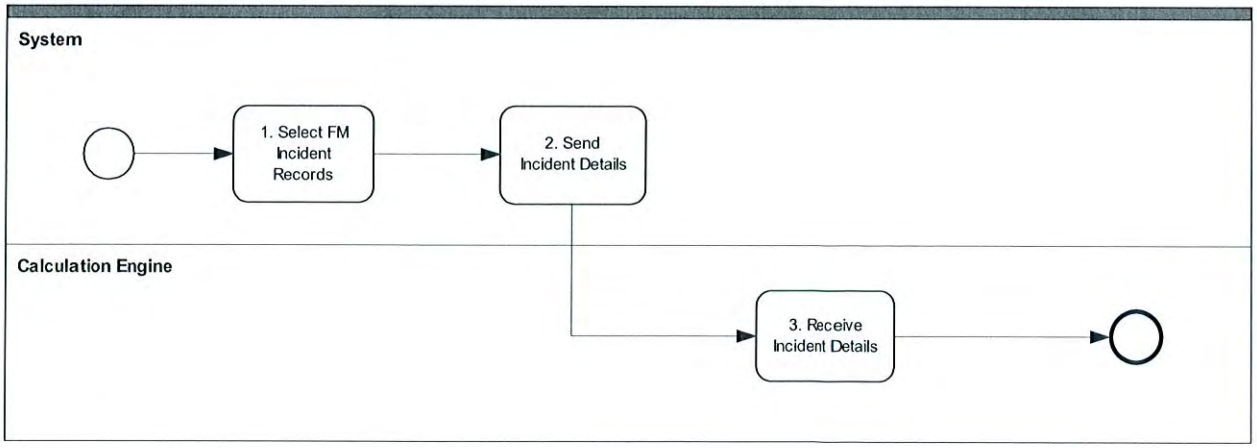
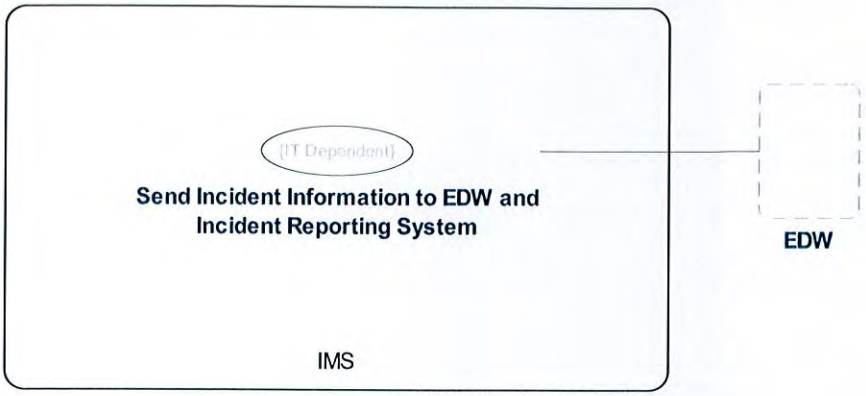
5.46.2 System Process Diagram



5.47 Send Incident Details to EDW and Incident Reporting System

5.47.1 Use Case Specification



Aliases	
Description	This use case describes electronically sending the Incident details to EDW / Performance / Legislative Reporting System for the purpose of reporting.
UID	IMS-UC-042
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Incident details are captured in IMS.
Postcondition	Incident details are passed to EDW and Incident reporting system.
Questions/Notes	

Normal Course of Events	1. Incident is created / Updated in IMS. 2. System sends all Incident data to EDW / Reporting System. 3. System receives successful confirmation 4. Reporting System/EDW generate necessary reports. 5. Exit Use Case.
Alternate Course of Events	Send Interaction Failed 3.1.1. System receives error message that send interaction is unsuccessful. 3.1.2. Return to normal course 3.

Diagrams	
Links to Other	
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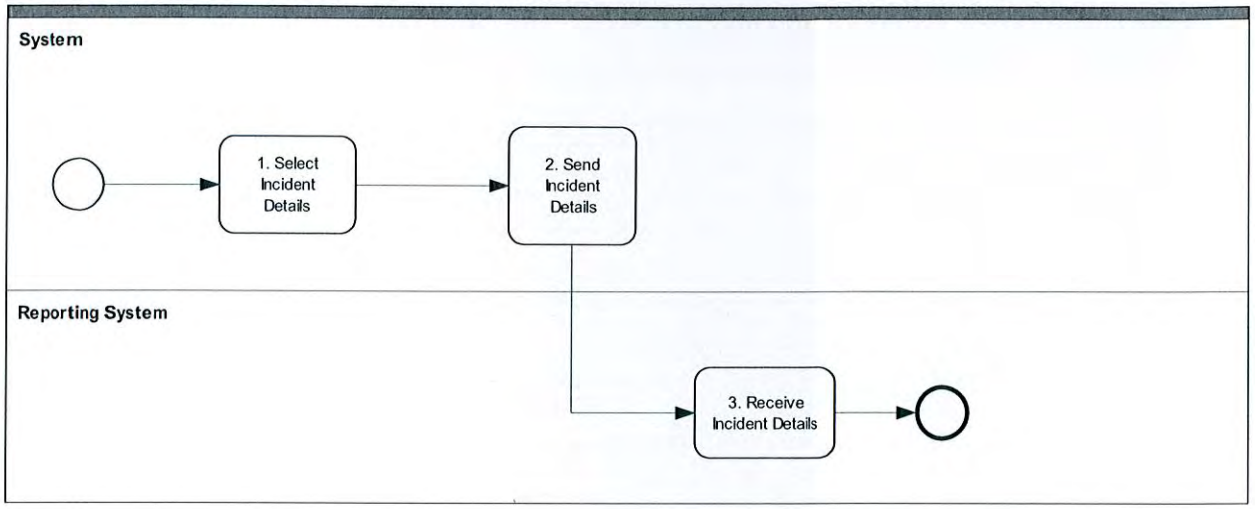
5.47.2 System Process Diagram



5.48 Publish to Third Party Consumer

5.48.1 Use Case Specification

Aliases	
Description	The IMS publishes a service for Incident Information suitable for consumption by third parties.
UID	IMS-UC-046
Abstract/Partial	false
Decision Point	false
Inherits	
Actors	
Precondition	Third party interface contract has been defined.
Postcondition	Third party consumer receives request Incident details.
Questions/Notes	

Normal Course of Events	1. Third party consumer system requests Incident data. 2. System sends requested data as per request. 3. Exit Use Case.
Alternate Course of Events	2.1.1. System interface fails and sends notification to system administrator and requester. 2.1.2. Exit Use Case.

Diagrams	
Links to Other	
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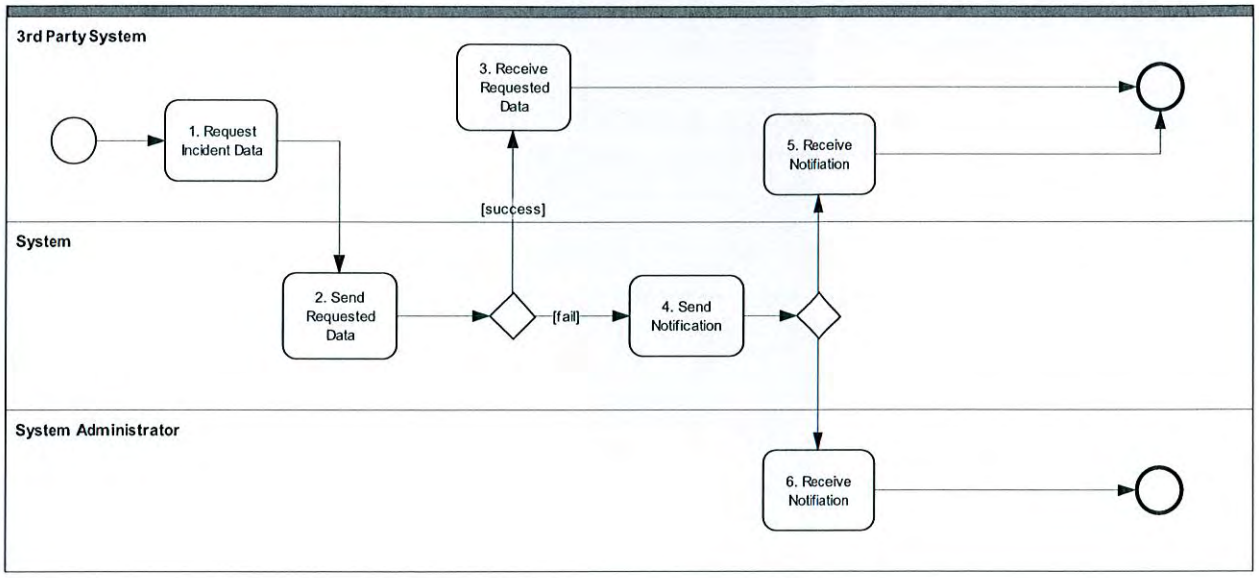
5.48.2 System Process Diagram



6. Business Rules

Rule ID	Name	Description	Category	Trace to Use Case
IMS-BR-001	Mandatory Information	The system shall enforce mandatory information is entered for all forms (Notification, Incident, Chapters).	On Validate	Update Retrieved CCTV Details; Create NIN; Maintain Configurable Lists; Update Infrastructure Asset; Update Reliability Attribution; Update Incident Attribution; Update Alternate Transport Details; Update Security Details; Escalate/De-escalate Incident; Update Emergency Protection; Update Fleet Asset Details; Create Delay Report; Update Safeworking Area
IMS-BR-002	Historic Date Limit	The system shall restrict historic Incidents to 6 months from system date.	On Validate	Create NIN; Create New Incident; Create Delay Report
IMS-BR-003	Date-range Search	The system shall restrict date range searches to 3 month periods (between date from and to).	On Field Changed	View Notification List; View Incident List
IMS-BR-004	SIMP	The system shall provide users access to SIMP documentation specific to the Location selected for the Incident.	On Query	View Supporting Documents
IMS-BR-005	ACJP	The system shall provide users access to ACJP documentation specific to the Location and Incident Category selected for the Incident.	On Query	View Supporting Documents
IMS-BR-007	Multiple Filters	The user shall be able to apply multiple simultaneous filters on listed items.	On Validate	View Notification List; View Incident List

Rule ID	Name	Description	Category	Trace to Use Case
IMS-BR-008	Remove Notification link to Incident	Removing a Notification linked to an Incident will only affect the selected association. Links to other Incidents are not affected.	On Complete	Update Incident Main Details; Action Notification Record
IMS-BR-009	Sophia	The system shall provide users access to documentation stored in Sophia, specific to the Location and Incident Category selected for the Incident.	On Query	View Supporting Documents
IMS-BR-010	Multiple Affected Persons	The system shall allow users to enter a maximum of at least 25 persons affected by the Incident	On Initiated	Create NIN; Update POI Details
IMS-BR-011	Attribution Records	The system shall allow users to divide Attribution between up to 5 responsible parties per Incident.	On Initiated	Update Incident Attribution
IMS-BR-012	Attribution Percentage	The collective Attribution percentage must total 100%.	On Validate	Update Incident Attribution
IMS-BR-013	IMT Roster	The IMT roster shall be uploaded annually and manually updated on an ad-hoc basis.	On Initiated	Maintain Configurable Lists
IMS-BR-015	Historical Incident	'Incident Occurred On' date can be in the past.	On Validate	Create NIN; Create New Incident; Create Delay Report
IMS-BR-016	External References	The system shall allow users to record up to 10 external reference numbers against an Iincident.	On Initiated	Create NIN; Create New Incident
IMS-BR-017	Emergency Protection Date	The system shall default the relevant emergency protection date to the 'incident occurred on' date when any of the protection check boxes are selected.	On Field Changed	Update Emergency Protection
IMS-BR-018	Emergency Protection Date Validation	Emergency Protection date & time cannot be in the future and must be >= Incident Occurred time/date.	On Validate	Update Emergency Protection
IMS-BR-019	Emergency Protection Lifted	Where Emergency protection is recorded, the date/time of Emergency protection being lifted is mandatory to Close an Incident record.	On Validate	Update Emergency Protection

Rule ID	Name	Description	Category	Trace to Use Case
IMS-BR-020	Safeworking Protection Date	The system shall default the relevant Safe Working protection date to the 'incident occurred on' date when any of the protection types are selected.	On Field Changed	Update Safeworking Area
IMS-BR-021	Safeworking Date Validation	Safe Working established & lifted date & time cannot be in the future and must be >= Incident Occurred time/date.	On Validate	Update Safeworking Area
IMS-BR-022	Safeworking Lifted	Where Safe Working protection is recorded, the date/time of Safe Working protection being lifted is mandatory to Close an Incident record.	On Validate	Update Safeworking Area
IMS-BR-023	PPP Maintenance Contract	Reliability Incident Attribution shall only be recorded for Incidents involving sets subject to the PPP maintenance contract (currently limited to A-sets).	On Initiated	Update Reliability Attribution
IMS-BR-024	Reliability Incident Default Attribution	Reliability Incident Attribution shall default to Reliance Rail.	On Initiated	Update Reliability Attribution
IMS-BR-025	Attribution Timing	Incident Attribution may be updated after the Incident is closed.	On Initiated	Update Incident Attribution
IMS-BR-026	Location From & To	Incident 'Location To' cannot be the same as the 'Location From'.	On Query	Create NIN; Create Delay Report
IMS-BR-027	POI - Identity Verified	Where Identity Verified is selected, the Identification Type field must be entered.	On Field Changed	Create NIN; Update POI Details
IMS-BR-028	POI - Injury	Where 'Injured' indicator is true, the Injury Details and Injury Severity fields must be entered.	On Field Changed	Create NIN; Update POI Details
IMS-BR-029	POI - Type	The system shall allow users to select multiple person types per person record.	On Validate	Create NIN; Update POI Details
IMS-BR-030	Incident Category	An Incident must have at least one Category.	On Validate	Create NIN; Re-classify Incident Type; Create Delay Report

Rule ID	Name	Description	Category	Trace to Use Case
IMS-BR-031	Remove Incident Category	Where an Incident Category is removed from an Incident, category-specific information already captured in will not be removed from the Incident.	On Complete	Re-classify Incident Type
IMS-BR-032	Notify Reporter Once	Reporter will only be notified first time Incident is closed or cancelled. If Incident is re-opened and closed, no subsequent notification is triggered.	On Complete	Notify Reporter of Closed Incidents
IMS-BR-033	Notify All Reporters	The system shall notify all Reporters of Notifications linked to the Incident.	On Complete	Notify Reporter of Closed Incidents
IMS-BR-034	One Message DL	The system shall display a 'One Message' distribution list.	On Initiated	Send Incident Communications
IMS-BR-035	SITREP DL	The system shall display a 'SITREP' distribution list.	On Initiated	Send Incident Communications
IMS-BR-036	Emergency Services	The system shall display Emergency Services contact details.	On Initiated	Send Incident Communications
IMS-BR-037	Configurable Updates	Administrative changes to configurable lists are reflected in system immediately.	On Complete	Maintain Configurable Lists
IMS-BR-038	SendSKMS1	The system shall send new Incident details to SKMS once it has been created.	On Complete	Send Safety and Environment Incidents to SKMS
IMS-BR-039	UpdateSKMS	The system shall send all updates while the Incident is in an Open state to SKMS.	On Complete	Send Safety and Environment Incidents to SKMS
IMS-BR-040	CMUpdateSKMS	The system shall send all updates made while the Incident is in Correction Mode to SKMS.	On Complete	Send Safety and Environment Incidents to SKMS
IMS-BR-041	ExporttoSKMS	System should populate Incident data into the 'IIMS 2 FPe update' template.	On Complete	Send Safety and Environment Incidents to SKMS
IMS-BR-042	SPADSKMS	System should send SPAD incidents to SKMS with all associated details	On Complete	Send Safety and Environment Incidents to

Rule ID	Name	Description	Category	Trace to Use Case
				SKMS
IMS-BR-043	IntelSend	The system shall send new Incident to D2DI once it has been created.	On Complete	Send Security Incidents to Intelligence Analysis and Reporting System
IMS-BR-044	UpdateIntel	The system shall send all updates while the Incident is in an Open state to DTDI	On Complete	Send Security Incidents to Intelligence Analysis and Reporting System
IMS-BR-045	CRUpdateIntel	The system shall send all updates made while the Incident is in Correction Mode to DTDI.	On Complete	Send Security Incidents to Intelligence Analysis and Reporting System
IMS-BR-046	SendPMS	The system shall send all Incidents involving Waratah sets to PPP Co. IMS	On Complete	Send Incident Information to PPP Co.
IMS-BR-047	UpdatePMS	Any subsequent updates to the Waratah Set related Incident shall be sent to PPP Co..	On Complete	Send Incident Information to PPP Co.
IMS-BR-048	ReceiveRRDoco	The system shall store all feedback and associated document in the agreed document management system.	On Validate	Receive Incident Supporting Information from PPP Co.
IMS-BR-049	AccessRRDoco	The system shall enable users to access stored documents by accessing links	On Complete	Receive Incident Supporting Information from PPP Co.
IMS-BR-050	SendCE	The system shall load all finalised Incident for the current month	On Complete	Send Finalised Incident Information to Calculation Engine
IMS-BR-051	FinalisedCE	The system shall load finalised incidents to the calculation engine.	On Complete	Send Finalised Incident Information to Calculation Engine
IMS-BR-052	SendFreqCE	All Finalised Waratah fleet related incidents shall be sent as per existing frequency (Once a day feed)	On Complete	Send Finalised Incident Information to Performance Management System
IMS-BR-053	SentFilterCE	The system shall send finalised Waratah related incidents to PMS	On Complete	Send Finalised Incident Information to Performance Management System

Rule ID	Name	Description	Category	Trace to Use Case
IMS-BR-054	SendTC	The system shall send new Incident from IMS once it has been created and root cause has been established.	On Complete	Send Train Crewing Incidents to Train Crewing Analysis and Reporting System
IMS-BR-055	UpdateTC	The system shall send all updates while the Incident is in an Open state to TC system.	On Complete	Send Train Crewing Incidents to Train Crewing Analysis and Reporting System
IMS-BR-056	CRUpdateTC	The system shall send all updates made while the Incident is in Correction Mode to TC system.	On Complete	Send Train Crewing Incidents to Train Crewing Analysis and Reporting System
IMS-BR-057	TCAttributionSend	All Incidents attributed to Train Crewing and Fleet shall be sent to Train Crewing Analysis and Reporting System for reporting and corrective actions management.	On Complete	Send Train Crewing Incidents to Train Crewing Analysis and Reporting System
IMS-BR-058	ReceiveRoster	Crew Rostering System shall send updated rostering information to IMS every 4 hours	On Complete	Receive Train Crewing Roster Information from Crew Rostering System
IMS-BR-059	ReceiveStaffRoster	Staff Rostering System shall send updated rostering information to IMS every 4 hours	On Complete	Receive Staff Roster Information from Staff Rostering System
IMS-BR-060	Send Delay Notification	The Train Location Monitoring System shall create a Notification for delays/delayed trips where delay does not have an associated IMS Notification/Incident identifier recorded.	On Query	Receive Delay Information from Train Location Monitoring System
IMS-BR-061	UpdateDelay	The Train Location Monitoring System shall electronically send all updates to delays/delayed trips to IMS.	On Query	Receive Delay Information from Train Location Monitoring System
IMS-BR-062	ContractDelay	For Waratah sets related Incidents additional contractual delay is fetched and populated for the purpose of the Reliability Incident Attribution based on the existing business rules	On Query	Receive Delay Information from Train Location Monitoring System
IMS-BR-063	ReportDelayUpdate	In IMS if delay formation is displayed in the Incident reports / queries, latest / most up-to-date delay should be fetched and displayed in IMS	On Query	Receive Delay Information from Train Location Monitoring System
IMS-BR-064	SendTLSOTR	TLS-OTR shall automatically receive associated Notification Id and /or	On Query	Send Incident Details to

Rule ID	Name	Description	Category	Trace to Use Case
		Incident information for the outstanding delay.		Train Location Monitoring System
IMS-BR-065	ReceiveFaults	Interface shall receive all faults for the selected Waratah Set Number.	On Query	Receive Open Fault Information from Fault Management System
IMS-BR-066	SendFaultSystem	The system shall send new Incident once the root cause has been established and the initial attribution has been performed.	On Complete	Send Fleet Related Incidents to Fault Management System
IMS-BR-067	UpdateFaultSystem	Any subsequent updates to the incident's attribution and root cause should be sent .	On Complete	Send Fleet Related Incidents to Fault Management System
IMS-BR-068	CRUpdateFaultSystem	The system shall send all updates made while the Incident is in Correction Mode to the Fault Management System.	On Complete	Send Fleet Related Incidents to Fault Management System
IMS-BR-069	Send to EDW	System shall have ability to request asset information based on Set Number or location of an Incident.	On Query	Send Incident Details to EDW and Incident Reporting System
IMS-BR-070	Date Validation	The system shall ensure all dates entered are valid dates.	On Validate	Create NIN; Update Incident Main Details; Create New Incident; Create Delay Report; Update Safeworking Area
IMS-BR-071	Filter Incidents for Linking	When linking a Notification to Incidents, the system shall display Incidents with the same Location and Incident Occurred Date as the Notification.	On Query	Action Notification Record
IMS-BR-072	Empty Lists	The system shall display an informative message to the user on all list screens where no items are found (based on the user's applied filter parameters).	On Query	View Notification List; View Incident List
IMS-BR-073	Closed Incident Default	When viewing Closed Incidents, the system shall apply a default date parameter of Incidents closed in the last 7 days.	On Query	View Incident List
IMS-BR-074	Incident Closed Conditions	The system shall declare an Incident as Closed when it is either: • Closed; or • Cancelled	On Query	View Incident List

Rule ID	Name	Description	Category	Trace to Use Case
IMS-BR-075	Multiple Delayed Services	The system shall allow recording of multiple impacted services including associated delays against an Incident.	On Initiate	Update Incident Main Details; Create New Incident; Receive Delay Information from TLS
IMS-BR-076	SendFMSystem	The system shall send new Incident to FM System where (Attribution) Force Mejeure indicator = true and attribution status is Finalised.	On Complete	Send Incident to FM Application; Send Fleet-related Incidents to FMS
IMS-BR-077	CRUpdateFMSystem	The system shall send all updates made while the Incident is in Correction Mode to the FM System.	On Complete	Send Incident to FM Application; Receive Open Faults from FMS
IMS-BR-078	SendRR	System must send all Incidents involving Waratah sets to PPP Co. IMS near real time..	On Complete	Send Incident Information to PPP Co.
IMS-BR-079	RRDataSet	Any subsequent Incident updates to the Waratah Set related Incident shall be sent to PPP Co on a refresh basis no longer than every 15 mins until Incident is finalised by External Attribution Officer	On Complete	Send Incident Information to PPP Co.

7. Risks and Issues

7.1 Risks

Ref #	Risk Description	Causes	Likelihood	Consequence	Mitigation
R273	Using REM for real-time, proactive incident management within current business environment and role capacity is not achievable (Release 1).	C1. Operator capacity to update system during incident management. C2. Behavioural change from current process of post-incident reporting.	L5	C3	C1. Future state business process design and role assignment. C2. Provide comprehensive user training. C2. Targeted communications educating users of change.
R265	Quality of the data in the ROC solution will not support business processes and provide accurate reporting	C1. Inability to consolidate multiple sources of data C2. Inability to cleanse data to support business requirements	L4	C2	C1 ROC data management strategy document to recommend use of data management tools to ensure integrity of the impacted data sets C1 Provisioning a data management tool and environments to ensure data integrity and compliance is effective C1 Development of workaround solutions in ROC application set
R187	New systems acquired do not permit decommissioning of nominated legacy systems	C1 The scope of the ROC program is limited to only 'day of operation' functions C2 Legacy systems support pre- and post-day of operation functions	L5	C2	C1, 2 Clarify scope as part of Detailed Design, and agree with key stakeholders C1, 2 Clearly define "decommissioning" in this context, differentiating between functional (e.g. functions moved from legacy to new system) and full (legacy system removed from environment)

Ref #	Risk Description	Causes	Likelihood	Consequence	Mitigation
R188	ROC does not interface with third party users of Sydney Trains network	C1 Lack of engagement with third parties C2 Lack of knowledge of third parties' systems C3 Misalignment between contractual arrangements in place with third parties and current business practices	C3	L5	C1, 2 Customer Central session with impacted stakeholders to agree on the operational boundaries of the ROC solution clarifying 'touchpoints' between Sydney Trains and other operators / maintainers (e.g. NSW trains, ARTC, Norwest rail, John Holland, etc) held on Friday 23/10 C1 Producing Technology Detailed Requirements Specifications and Solution Architecture Documents which will be reviewed and validated by external to ST Business/Technology stakeholders C1, 2 Work closely with the T&C work stream to align hand over processes with relevant third parties

7.2 Issues

Ref #	Issue Description	Assigned To	Target Resolution Date
I78	Master data – source of truth definition and quality of Sydney Trains' master data.	Marcus Symington-Jones	30 November 2015

8. Glossary of Terms

The following definitions are used in this document:

Term	Definition
ACJP	Alternate Customer Journey Plan
ASB	Absolute Signal Blocking
Attribution	All incidents that occur within Sydney Trains network control area must be attributed to the respective business areas for accountability and resolution.
BBT	Brake and Bearing Temperature system
Delay Report	A Delay Report is a report created by Train Crew to log the reason for a deviation from the planned timetable.
Documentum D2	Current storage solution for CCTV footage saved for requests processed through CCTV SharePoint site. See also eTMS.
DTDI	Day to Day Intelligence system
eTMS	Electronic Task Management System System used to request and retrieve CCTV footage (not yet in production). See also Documentum D2.
External Reference Number	Relates to any external system (to the IMS) unique identifier, e.g. IFMS, Possession Number, Lotus Notes, STN, etc.
IAM	Identity & Access Management
IIMS	Incident Information Management System
IMF	Incident Management Framework
IMS	Defines all components of the Incident Management System solution, implemented using REM.
IMT	Incident Management Team. The team activated to manage the operational response to a Level 3 incident.
Incident Category	The type of Incident defined for the record. An Incident may have more than one category.
Incident Manager	A person nominated to take overall responsibility for incident response management.
Location	Includes major physical assets – Stations, Maintenance Depots, Level Crossings, Stabling Yards, Car Parks & Buildings.
LPA	Local Possession Authority
MAO	Maximum Acceptable Outage is the time frame during which a recovery must become effective before an outage compromises the ability of an organisation to achieve its business objectives.
Network Incident Notice (NIN)	A NIN is a report created by staff to report an incident, or potential incident, to Incident Managers. Raising a NIN creates a Notification record in the IMS. See also Notification.
NGE	Network General Rule

Notification	A notification is a system record created to report an incident, or potential incident, to Incident Managers.
OOTB	Out of the Box
Open Incidents	Defined as Incidents with the status of either Initial Report or In Progress
OSP	Operator Specific Procedure
OTR	On-Time Running
REM	Rail Emergency Management (the incident management system)
RTO	Recovery time objective is the targeted duration of time and a service level within which a business process must be restored after a disaster (or disruption) in order to avoid unacceptable consequences associated with a break in business continuity.
Sector	The division of the rail network into independent sectors to reduce conflict between different services.
SIMP	Site Incident Management Plan
Simultaneous Conflict Resolution	Identified by a change made to the same data by a second user after the first user's update was initiated, but before it has been saved.
SITREP	Situation Report
SKMS	Safety Knowledge Management System
SRS	Security Reporting System
ST	Sydney Trains
System	The system refers to the IMS solution (see also IMS).
TOA	Track Occupancy Authority
TWA	Track Work Authority
VCS	Voice Communication System
WIMS	Wayside Information Management System

9. Appendices

9.1 Appendix A – Incident Categories

[Mapping of incident categories to chapters]

9.2 Appendix B – Responsibility Matrix

[Mapping of incident categories, chapters & functions to functional groups]

9.3 Appendix C – Default Attribution Matrix

[Mapping of incident categories/locations to attributable parties]

This configuration item will be developed at a later stage after further consultation with business representatives.

9.4 Appendix D – IMS Data Requirements

The following tables detail the minimum data capture required for the Incident Management System.

9.4.1 Notification

Name	Description	Type	Validation	Mandatory
Unique Identifier	The unique identifier of the Notification record.	Number	System generated Read only	Yes
Created Date / Time	Date and timestamp when the Notification is received by the system.	Date/time	Auto populated with system timestamp at creation. Read only	Yes
Source	The source of the Notification (e.g. mIMS)	Text	System populated	Yes
Incident Occurred	Date and time when the Incident occurred.	Date/time	Must be a valid date. Defaults to system date. Must be a valid time (no default value)	Yes
Notification Closed	Date and time when the Notification was closed	Date/time	Must be a valid date Must be a valid time System populated.	Yes
Incident Category	The category(ies) of Incident	Selection	Refer to *Appendix A*	Yes

Name	Description	Type	Validation	Mandatory
Status	The status of the Notification record	Text (derived)	Valid values are: • Open (default value) • Closed	Yes
Location (from)	The location of the Incident. The 'from' location of the Incident, if occurred between two locations.	Selection	List of all valid: • Stations • Maintenance Depots • Stabling Yards • Car parks • Properties/Buildings	Yes
Location (to)	The 'to' location of the Incident, if occurred between two locations.	Selection	List of all valid: • Stations • Maintenance Depots • Stabling Yards • Level Crossings • Car parks • Properties/Buildings	No
Platform	The platform where the Incident occurred	Selection	List of valid platform numbers. Filtered based on Location 'from' field.	No
Kilometrage	The kilometre marker at or nearest to the Incident	Decimal	None required	No
Train/Track Vehicle Trip Number	The Trip number(s) of the train(s) affected	Alphanumeric	Must be a valid Trip number.	No
Train/Track Vehicle Run Number	The Run number(s) of the train(s) affected	Alphanumeric	Auto-populated where Trip number entered. Can be overtyped by user.	No
Train/Track Vehicle Set Number	The Set number(s) of the train(s) affected	Selection	Auto-populated where Trip number entered. Can be manually selected/overridden by user.	No
Train/Track Vehicle Car Number	The Car number(s) of the train(s) affected by the Incident	Selection	Filtered by the Set number entered. Manually selected by user.	No
Location in Carriage	The location in the carriage where the	Selection	Selection from following values:	No

Name	Description	Type	Validation	Mandatory
	Incident occurred		• Lower Deck • Upper Deck • Vestibule • External	
Line & Direction	The affected line and track direction	Selection	List of valid Line/direction values. Filtered based on Location 'from' field. Filtered based on Location 'to' field (where entered).	No
Direction of Travel	The direction the train was travelling (for bi-directional lines)	Selection	Selection from following values: • Up • Down	No
Classification	The classification of the Incident, in line with the Sydney Trains IMF.	Selection	Selection from following values: • Level 1 – Routine • Level 2 – Significant • Level 3 – Major • Emergency	Yes
Delay Minutes	The number of minutes the service is delayed	Number	None required	No
Persons Injured?	Indicator to flag if people are injured as a result of the Incident	Check box	True/false Default = false	Yes
Emergency Services Required?	Indicator to flag if Emergency Services are required	Check box	True/false Default = false	Yes
Hazmat	Indicator to flag if Hazardous Materials are involved in the Incident	Check box	True/false Default = false	Yes
Nearest Access Point	Field to indicate to response personnel the nearest access point to the Incident location	Selection	Filtered based on Location	No
Person Details	Personal details of people injured or persons of interest	Various	Refer to *Persons of Interest* data requirements	No

Name	Description	Type	Validation	Mandatory
Incident Description	Text description of the Incident	Free-text	None required	Yes
Attachment	Attachments added to the Notification. May include images/videos etc.	File	None required	No
Reported By	Name of the person reporting the Incident	Text	Derived from logged in user details (manual)/source system (automated)	Yes
Reporter Designation	Position of the person reporting the Incident	Text	Derived from logged in user details	No
Reporter Phone Number	Phone number of the person reporting the Incident	Alphanumeric	Derived from logged in user details	No
Comments	Free-text description against the notification	Text	None required.	No

9.4.2 Delay Report

Name	Description	Type	Validation	Mandatory
Unique Identifier	The unique identifier of the Notification record.	Number	System generated Read only	Yes
Created Date / Time	Date and timestamp when the Notification is received by the system.	Date/time	Auto populated with system timestamp at creation. Read only	Yes
Source	The source of the Notification (e.g. mIMS)	Text	System populated	Yes
Run Number	The Run number of the train affected	Alphanumeric	None required	Yes
Date	Date of the delay	Date	System date. Auto-populated	Yes
Guard Name	Name of the Guard submitting the report	Text	Derived from logged in user	Yes
Guard Depot	The guard's depot	Selection	List of valid Depots	Yes
Classification	The classification of the Incident, in line with the Sydney Trains IMF.	Selection	Selection from following values: • Level 1 – Routine • Level 2 – Significant • Level 3 – Major	Yes

Name	Description	Type	Validation	Mandatory
			• Emergency	
Delay At	The time of the delay	Time	hh:mm Must be a valid time	Yes
Location (from)	The location of the delay. The 'from' location of the Incident, if occurred between two locations.	Selection	List of all valid Stations	Yes
Location (to)	The 'to' location of the delay, if occurred between two locations.	Selection	List of all valid Stations	No
Delay Minutes	The delay in whole minutes	Number	None required	Yes

Delay Cause	Indicators to flag the cause(s) of the delay	Multiple Selection	Multiple selection from following values:
			• Signals
			• Overcrowding
			• Wheelchair
			• Sick/Injury
			• Wait Relief
			• Transposition
			  o Extra Stops
			  o Removed Stops
			• Examiner on Train
			• Mechanical Issues
			• Security
			• Slow Running
			• Other Causes/emergencies
			• Late Departure Yard/MC/Siding
				Yes

Signal Number	The signal number causing the delay	Number	Required where Signals is selected as Delay Cause	No
Guard Explanation	Description of guard explanation for delay	Text	None required	No

9.4.3 Incident – Main Details

Name	Description	Type	Validation	Mandatory
Unique Identifier	The unique identifier of the Notification record.	Number	System generated Read only	Yes
Created Date / Time	Date and timestamp when the Notification is created.	Date/time	Auto populated with system timestamp at creation.	Yes
Incident Occurred	Date and time when the Incident occurred.	Date/time	Must be a valid date. Defaults to system date. Must be a valid time (no default value)	Yes
Incident Closed	Date and time when the Incident was closed.	Date/time	Must be a valid date Must be a valid time System populated.	Yes
Incident Category	The category(ies) of Incident	Selection	Refer to *Appendix A*	Yes
Status	The status of the Incident record	Selection	Selection from following values: • Initial Report • In Progress • Closed • Cancelled • Correcting mode	Yes
Location (from)	The location of the Incident. The 'from' location of the Incident, if occurred between two locations.	Selection	List of all valid: • Stations • Maintenance Depots • Stabling Yards • Level Crossings • Car parks • Properties/Buildings	Yes
Location (to)	The 'to' location of the Incident, if occurred between two locations.	Selection	List of all valid: • Stations • Maintenance Depots • Stabling Yards • Car parks • Properties/Buildings	No

Name	Description	Type	Validation	Mandatory
Platform	The platform where the Incident occurred	Selection	List of valid platform numbers. Filtered based on Location 'from' field.	No
Kilometerage	The kilometre marker at or nearest to the Incident	Decimal	None required	No
Signal	The signal involved in the incident	Selection	List of valid Signals. Filtered based on Location 'from' field. Filtered based on Location 'To' field.	No
Train/Track Vehicle Trip Number	The Trip number(s) of the train(s) affected	Alphanumeric	None required	No
Train/Track Vehicle Run Number	The Run number(s) of the train(s) affected	Alphanumeric	Auto-populated where Trip number entered. Can be overtyped by user.	No
Train/Track Vehicle Set Number	The Set number(s) of the train(s) affected	Alphanumeric	Auto-populated where Trip number entered. Can be overtyped by user.	No
Train/Track Vehicle Car Number	The Car number(s) of the train(s) affected by the Incident	Alphanumeric	Filtered by the Set number entered. Can be entered/overtyped by user.	No
Location in Carriage	The location in the carriage where the Incident occurred	Selection	Selection from following values: • Lower Deck • Upper Deck • Vestibule • External	No
Line & Direction	The affected line and track direction	Selection	List of valid Line/direction values. Filtered based on Location 'from' field. Filtered based on Location 'to' field (where entered).	No
Direction of Travel	The direction the train was travelling (for bi-directional lines)	Selection	Selection from following values: • Up	No

Name	Description	Type	Validation	Mandatory
			• Down	
Classification	The Classification of the Incident, in line with the Sydney Trains IMF.	Selection	Selection from following values: • Level 1 – Routine • Level 2 – Significant • Level 3 – Major • Emergency	Yes
Safety Impact	Impact of the Incident on Safety.	Selection	Selection from following values: • A • B • C • D • E	No
Performance Impact	Impact of the Incident on operations.	Selection	Selection from following values: • 1 • 2 • 3 • 4 • 5	No
Delay Minutes	The number of minutes the service is delayed	Number	None required	No
Service Impact	Impact to the delayed service.	Checkbox	Selection from following values: • No Delay • Started Short • Skipped in Running • Cancellation • Diverted • Stopped Short	No
UIC Code	Delay Code	Selection	Selection from valid UIC codes (see *references*)	No
Persons Injured?	Indicator to flag if people are injured as a result of the Incident	Check box	True/false Default = false	Yes
Emergency Services Required?	Indicator to flag if Emergency Services are required	Check box	True/false Default = false	Yes

Name	Description	Type	Validation	Mandatory
Emergency Services ETA	Estimated time of arrival for Emergency Services to arrive at the Incident location.	Time	hh:mm Must be a valid time.	No
Hazmat	Indicator to flag if Hazardous Materials are involved in the Incident	Check box	True/false Default = false	Yes
Nearest Access Point	Field to indicate to response personnel the nearest access point to the Incident location (e.g. gate number, street address etc.)	Free text	None required	No
Person Details	Personal details of people injured or persons of interest	Various	Refer to *Persons of Interest* data requirements	No
Incident Description	Text description of the Incident	Free-text	None required	Yes
Attachment	Attachments added to the Incident. May include images/videos etc.	File	None required	No
Reported By	Name of the person reporting the Incident	Text	Derived from logged in user details (manual)/source system (automated)	Yes
Reporter Designation	Position of the person reporting the Incident	Text	Derived from logged in user details	No
Reporter Phone Number	Phone number of the person reporting the Incident	Alphanumeric	Derived from logged in user details	No
External Reference Number	Allows recording of unique identifier from external system.	Alphanumeric	Allows multiple	No
Executive Summary	Sanitised description of the incident.	Free-text	Mandatory on close	No

9.4.4 Incident – Emergency Protection

Name	Description	Type	Validation	Mandatory
Warn Trains – Driver	Checkbox to indicate Driver has been informed of the	Checkbox	True/false Default = false	Yes

Name	Description	Type	Validation	Mandatory
	Protection type of Warn Trains.			
Warn Trains – Signaller	Checkbox to indicate Signaller has been informed of the Protection type of Warn Trains.	Checkbox	True/false Default = false	Yes
Warn Trains – Train Controller	Checkbox to indicate Train Controller has been informed of the Protection type of Warn Trains.	Checkbox	True/false Default = false	Yes
Warn Trains – date/time	Date & time of Warn Trains protection being established.	Date/time	Must be a valid date. Must be a valid time.	Yes
Signal Stop – Signaller	Checkbox to indicate Signaller has been informed of the Protection type of Signal Stop.	Checkbox	True/false Default = false	Yes
Signal Stop – Train Controller	Checkbox to indicate Train Controller has been informed of the Protection type of Signal Stop.	Checkbox	True/false Default = false	Yes
Signal Stop – date/time	Date & time of Signal Stop protection being established.	Date/time	Must be a valid date. Must be a valid time.	Yes
Train Stop - Driver	Checkbox to indicate driver has been informed of the Protection type of Train Stop.	Checkbox	True/false Default = false	Yes
Train Stop – Signaller	Checkbox to indicate driver has been informed of the Protection type of Train Stop.	Checkbox	True/false Default = false	Yes
Train Stop – Train Controller	Checkbox to indicate driver has been informed of the Protection type of Train Stop.	Checkbox	True/false Default = false	Yes
Train Stop – date/time	Date & time Train Stop protection being established.	Date/time	Must be a valid date. Must be a valid time.	Yes

Name	Description	Type	Validation	Mandatory
All Trains Stop - Driver	Checkbox to indicate Driver has been informed of the Protection type of All Trains Stop.	Checkbox	True/false Default = false	Yes
All Trains Stop – Signaller	Checkbox to indicate Signaller has been informed of the Protection type of All Trains Stop.	Checkbox	True/false Default = false	Yes
All Trains Stop – Train Controller	Checkbox to indicate driver has been informed of the Protection type of Train Stop.	Checkbox	True/false Default = false	Yes
All Trains Stop – Driver date/time	Date & time All Trains Stop protection being established.	Date/time	Must be a valid date. Must be a valid time.	Yes
Further Protective Measures	Commentary field allowing user to define any additional protective measures undertaken.	Free-text	None required.	No

9.4.5 Incident – Infrastructure Asset

Name	Description	Type	Validation	Mandatory
Reference Number	The unique identifier for the related fault/defect record within the external fault management system (Lotus Notes & IFMS)	Lotus Notes: Alphanumeric (12) IFMS: Numeric (8)	None required.	No
Status	The status of the fault/defect resolution.	Selection	Selection from following values: • Technician Called • Technician Dispatched • Technician On-site • Operational • Certified	Yes
Comments	Free-text field allowing optional commentary to be provided.	Free-text	None required.	No
Estimated Time	Allows recording of	Time	Must be a valid time.	

On-site	ETA for technician to arrive at the Incident location.		24 hour clock.	
Estimated Resolution Time	Allows recording of ETA for fault resolution.	Time	Must be a valid time. 24 hour clock.	No

9.4.6 Incident – Fleet Control

Name	Description	Type	Validation	Mandatory
Reference Number	The unique identifier for the related fault/defect record within ICFMS	Number	None required.	No
Status	The status of the fault/defect resolution.	Selection	Selection from following values: • Resolved with Train Crew • Train Technician Dispatched • Train Technician On-site • Resolved by Train Technician	Yes
ETA for Technician	Allows recording of the Estimated Time of Arrival for technician to arrive at train location.	Time	Must be a valid time. 24 hour clock.	No
Action Taken	Selection of action taken to resolve the issue.	Selection	• No Further Action Required • Set Removed from Run • Set Transposed	No
Car Locked?	Indicator to flag if a car has been locked	Check box	Yes/No	Yes
Car Number(s)	Record the car number(s) that have been locked.	Text	None required. Allows multiple entries	No
Car Position	Record the position of the locked car(s) in the set.	Selection	Valid values 1-8. Allows multiple entries.	No
Comments	Free-text field allowing optional commentary to be provided.	Free-text	None required.	No

9.4.7 Incident – Safe Working Area

Name	Description	Type	Validation	Mandatory
Safe Working Protection Type	Selection of the type of Safe Working protection established.	Selection	Selection from the following values: • LPA • TWA • TOA • ASB • Standing Train Protection	Yes
Power Cut?	Indicator to show if power has been cut by EOC ICON.	Checkbox	True/false Default = false	Yes
Safe Working Protection Established	Date and time the Safe Working Protection was established	Date/time	Must be a valid date. Must be a valid time.	Yes
Safe Working Protection Lifted	Date and time the Safe Working Protection was lifted.	Date/time	Must be a valid date. Must be a valid time.	No

9.4.8 Incident – Attribution

Name	Description	Type	Validation	Mandatory
Post Debit Allocation	?	Checkbox	True/false Default = false	Yes
Group	Responsible directorate	Selection	Selection from following valid values: • tbc	Yes
Responsibility Area	Responsible area within the directorate	Selection	Selection from following valid values: • tbc Filtered based on Group selection.	Yes
Event Type	Type of event attributable to the Incident	Selection	Selection from following valid values: • tbc	Yes
Cause	Deemed root cause of the Incident	Selection	Selection from following valid values: • tbc	Yes

Name	Description	Type	Validation	Mandatory
Force Majeure	Indicator to flag if incident root cause was due to force majeure	Checkbox	True/false Default = false	Yes
Explanation	Commentary field for further supporting details	Free-text entry	None required	No
% (percentage)	Percentage allocated per attribution responsible party	Number	User entry. Valid values 1 – 100	Yes
Total %	Sum of the percentage fields.	Number	Calculated value. Must equal 100.	Yes
Response Type	Records the response of the responsible parties	Selection	Selection from following values: • Send for Resolution • Accept • Reject • Partially Accept	Yes
Status	The status of the attribution process for the selected Incident	Selection	Selection from following values: • Initial • Investigation • Finalised	Yes
Attachments	Allows upload of attachments to the Attribution record	File	Allows multiple attachments.	No

9.4.9 Incident – Reliability Incident Attribution (A-Set)

Name	Description	Type	Validation	Mandatory
Contract OTR Delay	On-Time Running delay from planned timetable	Time	Auto-populated from TLS-OTR Read only	Yes
Contract Attribution Delay	The time of the OTR delay being attributed to the contract	Time	hh:mm:ss	Yes
IDA Category	Incident Disruption Adjustment category	Selection	Selection from following values: • Late • Very Late	Yes

			• Cancelled •	
Fault Id	Unique identifier for related fault in ICFMS	Alphanumeric	Lookup in FMBS.	No
Deemed Action	Indicator to flag Deemed Action	Yes/No	True/false Default = false	Yes
Problem Area	List of the area causing the incident	Selection	Selection from the following values: • Passenger Doors • Door Warning Device (DWD) • Intercar Doors • Air-Conditioning Passenger • Automatic Public Address and Emergency Intercom • Water Inside train • Blue Lights • Compressors • Lights Exterior • Door Open traction interlocking • Crew Compartment	No
Deemed Action Code	Unique code used to reference	Selection	Refer to Deemed Actions.xls	No
Deemed Action Time	Pre-defined value derived from Deemed Action Code.	Time	hh:mm Value derived from selection of Deemed Action Code. Read only Refer to Deemed Actions.xls	No
Reliability Description	Commentary field allowing user to enter resultant summary of the incident investigation.	Free-text	None required.	No
Reliability Incident Attribution	Identifies the party attributed with the incident.	Selection	Selection from the following values: • Reliance Rail • RailCorp Default value = Reliance Rail	Yes

Reliability Incident Attribution Status	Status of the attribution.	Selection	Selection from the following values: • Pending • Agreed • Disagreed Default value = Pending	Yes

9.4.10 Incident – Alternate Transport

Name	Description	Type	Validation	Mandatory
Buses				
Company Name	The name of the bus company to supply buses	Selection	Selection from following values: • TBC	Yes
Number Ordered	The number of buses ordered	Number	Numeric only	Yes
Number Supplied	The number of buses to be supplied	Number	Numeric only	Yes
ETA on Pickup Location	Estimated time for first bus to arrive at start location	Time	hh:mm must be a valid time	No
Sub-contracted - Company Name	The company name if services have been sub-contracted by the main bus company	Selection	Selection from following values: • TBC	No
Sub-contracted - Number Supplied	The number of buses to be supplied by the sub-contracted bus company	Number	Numeric only	No
Pickup Location	The pickup location for the buses	Selection	List of valid Stations	Yes
Drop-off Location	The drop off location for the buses	Selection	List of valid Stations	Yes
Estimated Number Passengers	Estimate of the number of people impacted	Selection	Selection from following values: • 50+ • 100+ • 250+ • 500+	Yes

			• 1000+ • 2500+ • 5000+	
Impact	User determined value based on customer impact.	Selection	Selection from following values: • Minor • Major • Moderate	Yes
Actual Number of Buses	Total number of buses that arrived.	Number	Mandatory on close	No
Actual time of arrival	Time of arrival of first bus	Date/time	Mandatory on close	No
Details	Commentary field for user to record additional details.	Free-text	None required.	No
Taxis				
Authority Number	Taxi authority number	Number	None required	Yes
Pickup Location	The pickup location for the Taxi	Selection	List of valid Stations	Yes
Drop-off Location	The drop off location for the Taxi	Selection	List of valid Stations	Yes
Number of Passengers	The number of passengers (to determine need for maxi taxi or regular)	Number	Numeric only	Yes
Details	Commentary field for user to record additional details.	Free-text	None required.	No

9.4.11 Incident – CCTV Retrieval

Name	Description	Type	Validation	Mandatory
Incident Footage	Used to record (copy & paste) hyperlink to retrieved CCTV footage in Documentum D2 (current) or eTMS (future).	Hyperlink	None required. Allows multiple links to be recorded.	No

ATRICS Replays	Used to record hyperlink to ATRICS replay video files.	Hyperlink	None required. Allows multiple links to be recorded.	No

9.4.12 Incident – Security Incident

Name	Description	Type	Validation	Mandatory
Offence Type	The category of offence related to the Incident	Selection	Filter based on Incident category selected. Offence against Person • Assault • Robbery • Sexual Assault • Indecent Assault • Steal from Person Offence against Property • Equipment Interference • Graffiti • Suspicious Item • Vandalism • Arson • Accident • Theft • Object on Lines • Object Thrown Anti-Social Behaviour • Domestic Altercation • Intimidation / Harassment • Unruly / Offensive / Nuisance Behaviour • Unauthorised Commercial Activity / Begging • Consuming Alcohol / Intoxication • Misuse / Dealing of	Yes

			Drug or Substance • Possess Weapon/Implement • Misuse Public Space / Loitering Injury / Fatality • Self-harm/suicide • Attempted Self-harm/suicide • Misadventure • Accident • Medical Condition Occasioning Death • Homicide • Suspicious / Undetermined Trespass • Rail Corridor (Per Way) • Tunnel • On Track • On Station • On Train	
Description	Text description to annotate details of the offence.	Free-text	None required.	Yes

9.4.13 Incident – Persons of Interest

Name	Description	Type	Validation	Mandatory
Person Type	Type of person related to the Incident	Selection	Selection from following values: • Victim • Perpetrator • Person of Interest • Witness Can select multiple.	Yes
Relationship	The relationship to the person to Sydney Trains at time of occurrence.	Selection	Selection from following values: • Passenger	Yes

Name	Description	Type	Validation	Mandatory
			• Public • Employee • Contractor • Volunteer • Trespasser	
First Name	First name of person	Free-text	None required	Yes
Surname	Surname of person	Free-text	None required	No
Gender	Gender of person	Selection	Selection from following values: • Male • Female • Unknown	Yes
Date of Birth	Date of Birth of person	Date	Must be a valid date. Cannot be in the future.	No
Age Range	Approximate age of the person where DOB is not known	Selection	Selection from following values: • Child 0-10 • Pre Youth 11-14 • Youth 16-24 • Adults 25-64 • Elderly 65+ • Unknown	No
Identity Verified?	Flag to indicate if the person's identity was verified by ID	Checkbox	True/false Default = false	Yes
Identification Type	The type of identification sighted to verify the person	Free-text	Mandatory if 'Identity Verified' checkbox = True	No
Identification Number	The reference number of the identification sighted	Free-text	None required	No
Distinguishing Features	Text field for additional comments describing the person	Free-text	None required	No
Employee ID	The employee id of the person, if they are a staff member	Number	Validate against ERP system.	No

Name	Description	Type	Validation	Mandatory
Injured?	Indicator to flag if the person was injured.	Checkbox	True/false Default = false	Yes
Injury Details	Text field to describe the injury sustained by the person	Free-text	Where Injury indicator = True, field is mandatory.	No
Injury Severity	Severity of the injury sustained	Selection	Selection from following values: • Fatal • Serious Injury • Minor Where Injury indicator = True, field is mandatory.	No
Phone Number	Phone Number of person	Alphanumeric	None required	No
Address – Property Name	The property name of the address	Text	None required	No
Address – Unit Number	The unit number of the address	Alphanumeric	User entry with completion aid. Lookup/verify against valid addresses	No
Address – Street Number	The street number of the address	Alphanumeric	User entry with completion aid. Lookup/verify against valid addresses	Yes
Address – Street Name	The street name of the address	Free-text	User entry with completion aid. Lookup/verify against valid addresses	Yes
Address – Suburb	The suburb of the address	Free-text	User entry with completion aid. Lookup/verify against valid addresses	Yes
Address – State	The state of the address	Selection	User entry with completion aid. Lookup/verify against valid addresses	Yes
Address – Postcode	The postcode of the address	Numeric	User entry with completion aid. Lookup/verify against valid addresses	Yes
Address – Latitude	The latitude of the address	Alphanumeric	Auto-populate based on address entered	Yes
Address –	The longitude of the	Alphanumeric	Auto-populate based on	Yes

Name	Description	Type	Validation	Mandatory
Longitude	address		address entered	

9.4.14 Incident – Train Crewing

Name	Description	Type	Validation	Mandatory
Relief Required	Which crew member(s) need to be relieved	Selection	Selection from following values: • Guard • Driver • Both • Not Required	Yes
Relief Driver Available?	Record if Driver relief is available	Selection	Yes/No	Yes
Relief Guard Available	Indicator to flag if Driver relief is available	Selection	Yes/No	Yes
Driver ETA	An estimated time of arrival for the driver to be aboard the train	Time	hh:mm	No
Guard ETA	An estimated time of arrival for the guard to be aboard the train	Time	hh:mm	No
Crew Unavailable Reason	Reason for Train Crewing Incident.	Selection	• Not Qualified for Route • Not Qualified for Set • FNA - Failed No Advice • NAPOD • Not Fit for Duty • No COC card (Certificate of Competency • Relinquished • Personal Needs • Unplanned Leave • Award Breach • Staff Shortage (rostered)	Yes
Description of Crewing Incident	Description field to capture the details of the crewing incident.	Free-text	None required.	Yes
Action Taken by	Description of the	Free-text	None required.	No

Name	Description	Type	Validation	Mandatory
Assigner	actions taken by the Assigner to remedy the situation.			

9.5 Appendix E – Integration Data Requirements

The following tables detail the minimum data requirements for integration with upstream and downstream systems.

9.5.1 IMS to SKMS

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Fleet Control	Data captured in Incident Fleet Control Details
Incident – Security Incident	Data captured in Incident Security Incident Details
Incident – Train Crewing	Data captured in Incident Train Crewing Details

9.5.2 IMS to Safety Intelligence Management System

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Security Incident	Data captured in Incident Security Incident Details
Incident – Persons of Interest	Data captured in Incident Persons Of Interest Details
Incident – Train Crewing	Data captured in Incident Train Crewing Details

9.5.3 IMS to PPP Co

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details

Name	Description
Incident – Fleet Control	Data captured in Incident Fleet Control Details
Incident – Reliability Incident Attribution (A-Set)	Data captured in Reliability Incident Attribution Details
Incident – Security Incident	Data captured in Incident Security Incident Details
Incident – Train Crewing	Data captured in Incident Train Crewing Details

9.5.4 PPP Co to IMS

Name	Description
Incident – Reliability Incident Attribution (A-Set)	Data captured in Reliability Incident Attribution Details including supporting information for an Incident attribution like documents and images

9.5.5 IMS to PMS

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Reliability Incident Attribution (A-Set)	Data captured in Reliability Incident Attribution Details

9.5.6 IMS to Calculation Engine

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Reliability Incident Attribution (A-Set)	Data captured in Reliability Incident Attribution Details

9.5.7 IMS to Train Crewing Analysis System

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details

Name	Description
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Fleet Control	Data captured in Incident Fleet Control Details
Incident – Train Crewing	Data captured in Incident Train Crewing Details

9.5.8 Train Crew Rostering System to IMS

Name	Description
Train Crew Planned Roster	IMS to receive updates of planned Train Crew Roster requested by IMS based on date, asset involved in an Incident
Standby Roster Details	IMS to receive updates of Standby Train Crew Roster as requested by IMS IMS based on date, Location of an Incident

9.5.9 Staff Rostering System to IMS

Name	Description
Staff Planned Roster	IMS to receive updates of planned Staff Roster requested by IMS based on date, Location of an Incident
Staff Roster Details	IMS to receive updates of Standby Staff Roster as requested by IMS IMS based on date, Location of an Incident

9.5.10 TLS-OTR to IMS

Name	Description
Train/Track Vehicle Trip Number(s)	The Trip number of the train affected
Delay Minutes	The number of minutes the service is delayed
Service Impact	One of the following: • No Delay • Started Short • Skipped in Running • Cancellation • Diverted • Stopped Short • Excluded Trip
Location (from)	The location of the Incident. The 'from' location of the Incident, if occurred between two locations.
Location (to)	The 'to' location of the Incident, if occurred between two locations.

Name	Description
Trip Date and Time	Date and time of the affected trip
Train/Track Vehicle Run Number	The Run number of the train affected
Line & Direction	The affected line and track direction
Direction of Travel	The direction the train was travelling (for bi-directional lines)

9.5.11 IMS to TLS-OTR

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Fleet Control	Data captured in Incident Fleet Control Details
Incident – Reliability Incident Attribution (A-Set)	Data captured in Reliability Incident Attribution Details
Incident – Security Incident	Data captured in Incident Security Incident Details
Incident – Persons of Interest	Data captured in Incident Persons Of Interest Details
Incident – Train Crewing	Data captured in Incident Train Crewing Details

9.5.12 IMS call to FMS

Name	Description	Type	Validation	Mandatory
IMS request with				
Train/Track Vehicle Set Number	The Set number of the train affected	Alphanumeric	Auto-populated where Trip number entered. Can be overtyped by user.	Yes
FMS to return List of following for the selected Incident				
Fault Id	Unique identifier for related fault in ICFMS	Alphanumeric	Lookup in FMBS.	Yes
Fleet Architecture	Fleet Architecture impacted associated with the fault	Alphanumeric	Lookup in FMBS.	Yes

9.5.13 IMS to FMS

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Fleet Control	Data captured in Incident Fleet Control Details

9.5.14 Asset Management System to IMS

Name	Description
Rolling Stock asset Details	IMS to receive details of rolling stock as and when requested based on the Set number involved in the Incident
Fixed Asset Details	IMS to Receive fixed asset details based on the location of an Incident

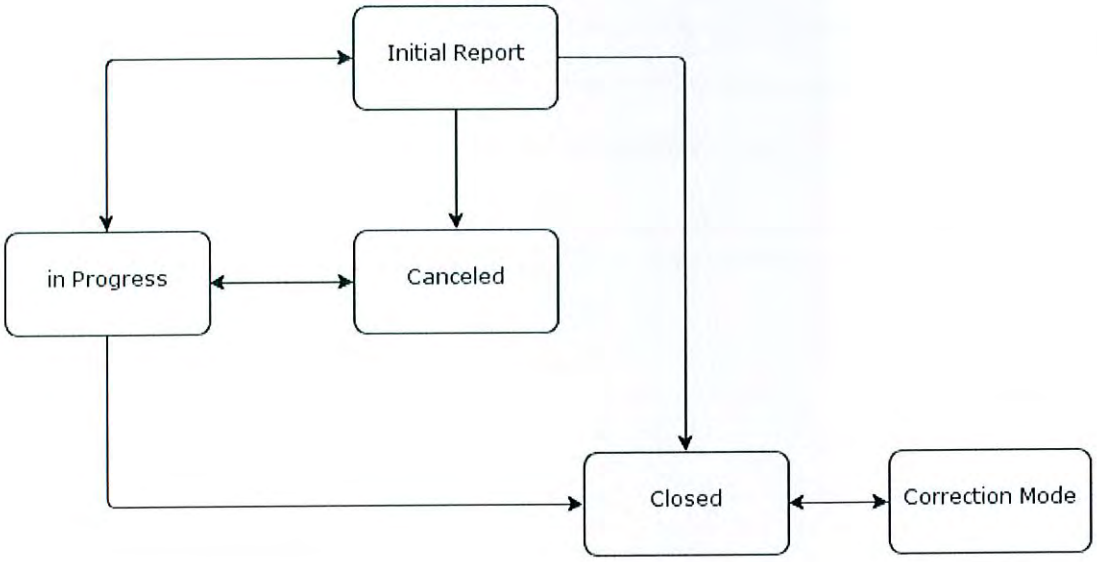
9.5.15 IMS to EDW

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details
Incident – Infrastructure Asset	Data captured in Incident Infrastructure Asset Details
Incident – Fleet Control	Data captured in Incident Fleet Control Details
Incident – Reliability Incident Attribution (A-Set)	Data captured in Reliability Incident Attribution Details
Incident – Security Incident	Data captured in Incident Security Incident Details
Incident – Persons of Interest	Data captured in Incident Persons Of Interest Details
Incident – Train Crewing	Data captured in Incident Train Crewing Details

9.5.16 IMS to FM Application

Name	Description
Incident – Main Details	Data captured Incident Main Details
Incident – Attribution	Data captured in Incident Attribution Details

9.6 Appendix F – REM State Machine Diagram



Transport Sydney Trains

Release 1 – REM (IMS)
Solution Architecture Document (SAD)
Rail Operations Centre (ROC) Program

Release 1 – IMS Solution Architecture Design (SAD)	
Project or Program	ROC Program

Document Ownership Information

Capital Register ID	3141.02	
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Sponsor's Delegate	Neil Brown, ROC Transformation Director	Customer Service
Program Director	Matt McInnes, ROC Program Director	Customer Service

Document Name and Version Control

(Circulated versions only)

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Version	**Date**	**Author**	**Reason for Issue / Changes Included**
0.1	Oct 15	Linley Kan	First Draft
0.2	Nov 15	Linley Kan	Appended Information Architecture section Appended SAD problem statements Converted VISIO diagrams to PNG images Update with Vendor feedback Pending approval –risk assessment & data classification
1.0	Nov 15	Linley Kan	Appended SAD problem statements Update with feedback Pending approval –risk assessment & data classification

References

Ref	Document	Version
HTLBR	ROC Release 1 – IMS High Level Technology Business Requirements	V2.0
PCAR	ROC Release 1 – IMS Project Concept and Review	V2.4
DTBR	ROC Release 1 – IMS Detailed Technology Business Requirements	To Be Released
FSBP	ROC Release 1 – IMS Future State Business Processes	To Be Released
PGA	ROC Release 1 – IMS Product Gap Analysis	V4.0
FS	ROC Release 1 – IMS Functional Specification	V3.0
IS	ROC Release 1 – IMS Integration Specification	V3.0
NFS	ROC Release 1 – IMS Non Functional Specification	TBC – V3.0
TA	ROC Release 1 – IMS Data Technical Analysis Outputs	TBC – V1.0
OM	ROC Release 1 – IMS Operational Model	TBC – V1.1
OSP 20 Reporting Incidents	*http://railsafe.sydneytrains.nsw.gov.au/trim/secure-library/secure-library-osp?RecordNumber=D2013%2F77931*	
OSP 12 Responding to an Incident	*http://railsafe.sydneytrains.nsw.gov.au/trim/secure-library/secure-library-osp?RecordNumber=D2013%2F77923*	
Incident communications protocol	*http://intranet.sydneytrains.nsw.gov.au/__data/assets/pdf_file/0006/95559/incident-management-commn-protocols-procedures.pdf*	
Incident Management Frameworks 1,2,3	*http://intranet.sydneytrains.nsw.gov.au/__data/assets/pdf_file/0006/47544/IMF-Part-1_V-2.1-Final-.pdf* *http://intranet.sydneytrains.nsw.gov.au/__data/assets/pdf_file/0007/47545/IMF-Part-2_V-2.1-Final.pdf* *http://intranet.sydneytrains.nsw.gov.au/__data/assets/pdf_file/0008/47546/IMF-Part-3_V-2.1-Final.pdf*	

Table of Contents

1 Introduction

1.1 Document Purpose

The purpose of the solution design is to:

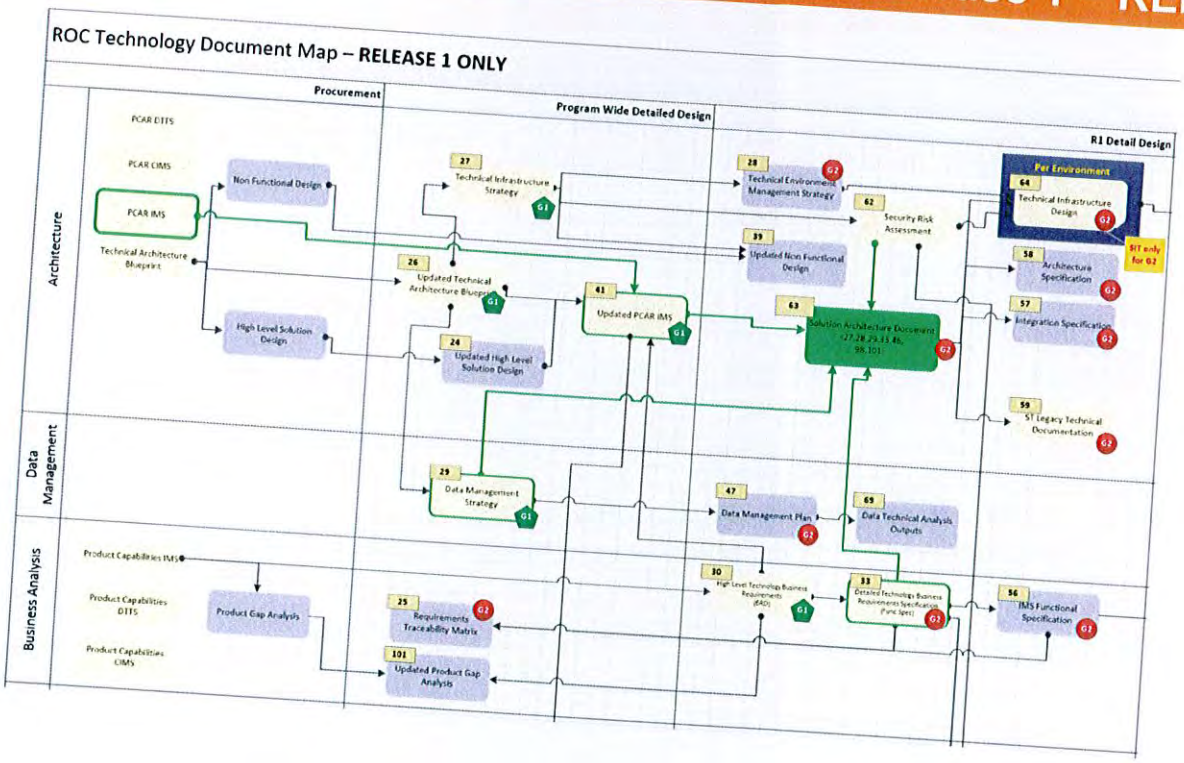
- Communicate the end-to-end IT solution to all stakeholders
- Provide traceability of the solution back to business requirements and domain architecture
- Provide all views of the solution required for design, build, testing and implementation
- Define all impacts of the solution for estimation, planning and delivery purposes

The structure of the document develops the solution from the drivers of why the solution is needed, through the conceptual non-technical description to the actual black-box solution design and delivery implications.

- **Drivers and constraints of the solution** - Define the purpose and goals of the project along with the constraints of the solution
  - Project overview
  - Domain architectures
  - Business context
  - Requirements
- **Conceptual solution** - Defining the conceptual architecture by defining the current and target state in a more abstract view
- **Logical solution** - Specify the solution using the various architecture views
- **Solution delivery** - Specify the delivery approach and assessment of the solution
  - Delivery considerations
  - Architecture assessment
  - Impacts assessment

This document forms part of the ROC Technology documentation Suite for Release 1 Gate 2.

The diagram below shows a relationship of this document (SAD) to other deliverables for R1:



1.2 Background

The Rail Operations Centre (ROC) is a Sydney Trains led program that seeks to improve management of Day of Operations activities and improve the delivery of services for Sydney Trains and NSW Trains and their customers. The ROC Program consists of:

1. Infrastructure: a new ROC building
2. People: co-location of Day of Operations functions into the ROC
3. Technology: four new system capabilities
    a. Day of Operations Timetable System "DTTS"
    b. Incident Management System "IMS"
    c. Customer Information Management System "CIMS"
    d. Operational Visual Display System "OVDS"
4. Processes: new improved ways of working enabled by all of the above

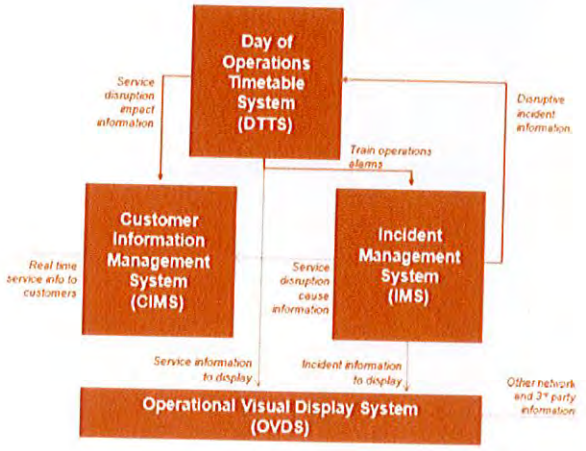
The ROC vision supports the strategies of TfNSW, Sydney Trains, and NSW Trains to transform the customer experience in line with their vision of **"putting the customer at the heart of everything we do".**

Better coordination, communication, and management will be achieved through the ROC, which will co-locate teams and transform the processes, systems, and communications for Day of Operations functions. This co-location is expected to include computer based signalling locations, train control, security, customer information, fleet management, asset monitoring and incident response functions.

The transformation will deliver consistent, accurate, timely and up to date information to customers about delays and enable faster incident resolution and service recovery. It will provide the operational management of the Sydney Trains network with a highly coordinated customer focus and will support the realisation of benefits from future initiatives including major infrastructure programs, the Rail Futures Strategy, and future business model changes.

The ROC Day of Operations model will be supported by four new system capabilities, integrated with each other and into the Sydney trains environment:

- Day of Operations Train Timetabling System (DTTS). Provides computerised support for monitoring services and managing service disruptions.
- Incident Management System (IMS). Provides computerised support for identification of incidents, assignment of priority, allocation of pre-planned workflows, tracking of progress, escalation and reporting.
- Customer Information Management System (CIMS). Provides a single source of truth for customer information and the co-ordinated distribution of planned service details as well as service disruption information over multiple channels.
- Operational Visual Display System (OVDS). Provides an integrated monitoring capability. It supports the creation of virtual walls containing the output from multiple source systems.



In addition to meeting the business needs and capabilities of the ROC, the new systems will also support international transport-based integration standards and allow for future expansion into computer based traffic management.

The ROC solution is expected to deliver a number of key benefits for transport customers in NSW.
The ROC will transform the customer experience of train services, delivery the following **benefits to customers:**

- **Increased operational performance and opportunity for timetable enhancements** - providing the capability to sustain on-time running with higher timetable frequencies and faster running times
- **Reduced delay times and improved confidence in rail** - Improved processes, systems and relationships between 'day of operations' resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration
- **More accurate, timely, relevant and consistent customer information during delays** -Improving the customers' ability to make decisions about their transport options
- **Improved customer service** - Greater empowerment of station staff to directly assist and inform customers, enabled by better information

The ROC will also deliver **improvements to the rail business units:**

- **Better realising the benefits of future investments in rail capacity** - The ROC will be critical to realise ongoing strategic network efficiency initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, and new network segmentation. This is driven by the creation of a scalable network control function that can respond to changes in network demand and increased train service levels.
- **Providing a new world standard operating centre and culture** - The ROC will transform the way 'day of operations' activities are managed within Sydney Trains and NSW Trains, fostering a new culture of collaboration and efficient coordination, enabled by new system capabilities and enhanced by process redesign, structural redesign and a centre built around key cultural goals. The expectations that this will deliver closer collaboration, improved internal communications and the creation of a shared culture.
- **Improved efficiency and sustainability** - Providing opportunities for 'day of operations' role consolidation and reduction in the cost of operations

1.3 Program Release

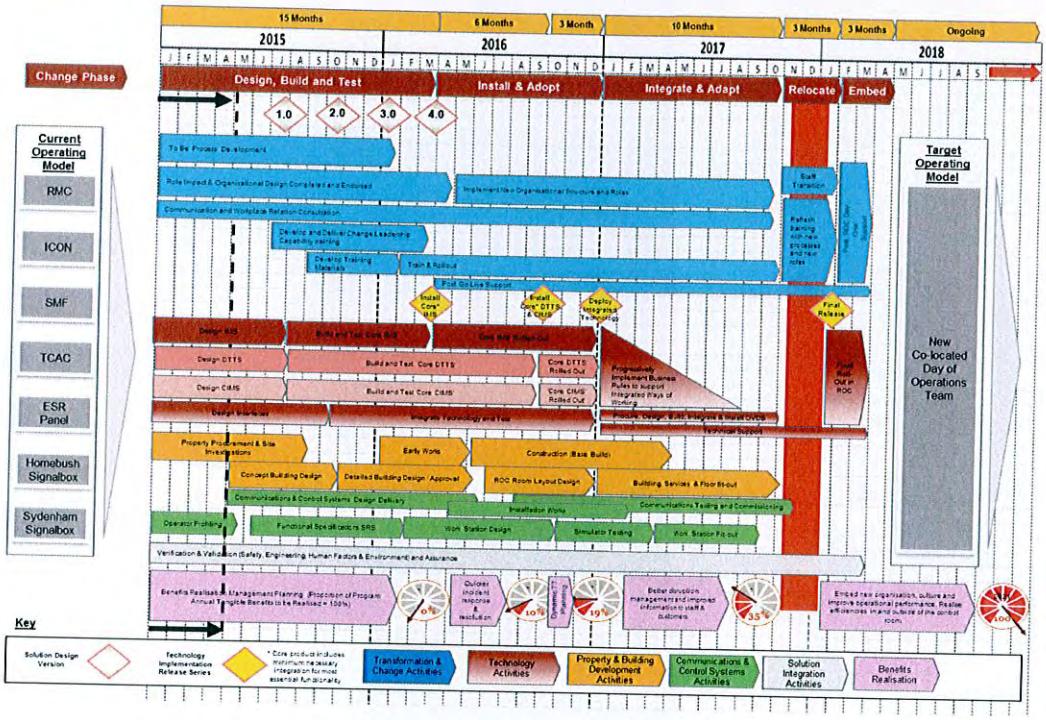
The program roadmap currently proposes 4 releases:

- **Release 1**
  The first release will be IMS 'out of the box and configuration" with core legacy systems integration to support the solution.

- **Release 2**
  The second release consists of DTTS and CIMS which require more complex network configurations and legacy or source system integration as required. No integration between ROC components are in this phase.

- **Release 3**
  The third release delivers the new technology systems (IMS, CIMS and DTTS) as a (near) complete, integrated solution, but still in the existing locations.

- **Release 4**
  The final release delivers the complete, integrated solution in the new ROC location, including OVDS. The new organisation with substantial changes to roles and cultural expectations will be established in this final release. The 'to-be' process model will be fully implemented along with the documented operated procedures and work instructions for handover to BAU.


15 Months
6 Months
3 Month
10 Months
3 Months
3 Months
Ongoing
2015
2016
2017
2018
Change Phase
Design, Build and Test
Install & Adopt
Integrate & Adapt
Relocate
Embed
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Current Operating Model
RMC
ICON
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Target Operating Model
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Key
Solution Design Version
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Property & Building Development Activities
Communications & Control Systems Activities
Solution Integration Activities
Benefits Realisation

1.4 IMS Solution Overview

Incidents impact service measures in the areas of security, cleanliness, safety, efficiency and on-time-running of trains. As the performance of each of Sydney Trains business units is assessed using these measures they have each developed business processes that aim to:

1. Prevent incidents from occurring thru reliability, performance, analytics and improvements
2. Contain the incident, prevent consequential incidents (and restore service if applicable).
3. Rectify any damage caused during the incident.
4. Investigate the incident (and implement corrective actions if appropriate).
5. Report incident management performance (and consequently put focus on preventing / controlling particular incident types).
6. Notify stakeholders when incidents do occur.

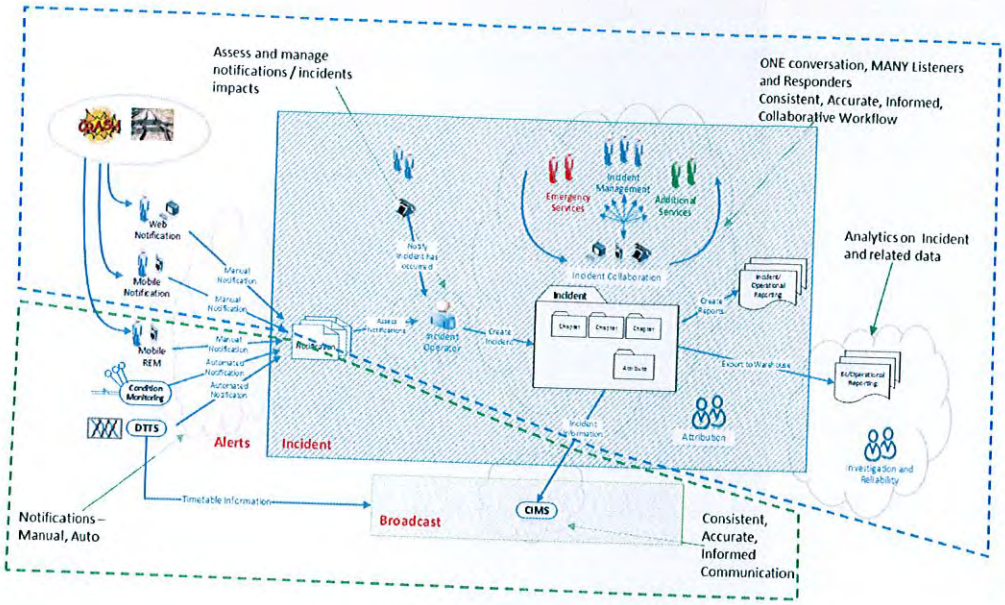
ROC Release 1 is to implement an Incident Management System that will enable a change to the real-time system management of incidents that cause disruption of the Day of Operations from the current practice of performing post incidents/events data capture.

The current challenges Operational Incident Management is facing and impeding the primary role of "keep trains running" are:

- × No single source of truth for Incident management information
- × Legacy systems are Bespoke and unintegrated or tightly coupled to existing processes
- × Current functionality scope is limited to recording and reporting "post incident"
- × No functional support for real time capture and information dissemination needs of incident management processes
- × No automation, workflow, audit trail capabilities
- × Several Dedicated Operational Centres
- × Fragmented and poor communication lacking in technology support (i.e. Main communication channel via Telephony)
- × Slow recovery from incidents
- × Confused unhappy customer caused by inaccurate, inconsistent and lack of information

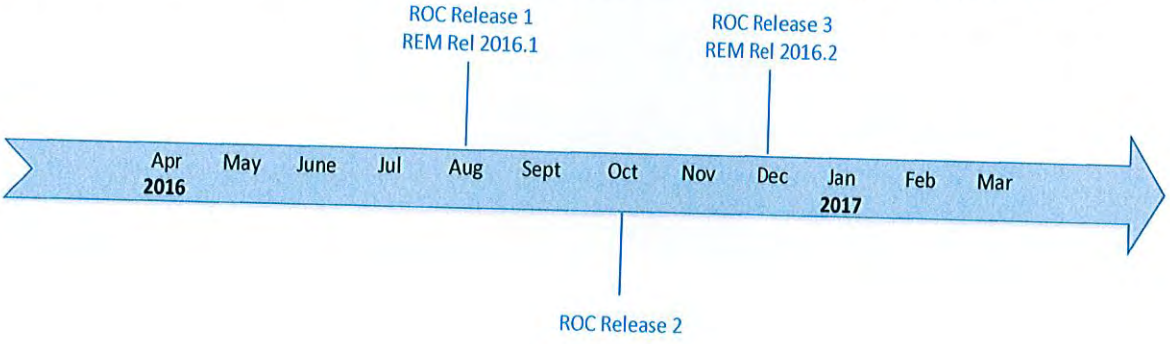
The target state solution will provide the business with:

- ○ A single source of truth of incident information for customers and staff in real-time
- ○ A significantly streamlined incident management process reducing number of telephone conversations for obtaining incident information
- ○ Decision makers will be able to concentrate on resolving disruption and restoring services, rather than calling other parts of implementation chain and fielding queries
- ○ Potential to retire and consolidate number of existing incident management system



Release Schedule:

To provide the business with comprehensive operational Incident Management capabilities and align with the fixed Vendor bi-annual Release Cycle REM Rel 2016.1, the ROC Release1 schedule has been ENDORSED by SDRG for deployment in 3rd Quarter 2016.



1.5 Project Scope

1.5.1 In Scope

ID#	Scope Item
IMS_SC_01	All NEW operational incidents impacting train services, causes, delays and cancellations will be created and managed in the NEW REM incident management system. All legacy operational and SPAD incidents initiated prior to the deployment of REM will be completed in the legacy incident management system.

	All legacy operational and SPAD incidents both active and completed will BE RETAINED and **NOT be migrated** to the new REM incident management system.
IMS_SC_02	The **Preferred solution** of transitioning all existing IFMS incidents into REM has proved impracticable to the ICON business due to a tight coupling with engineering and asset management which falls into the EAM project remit scheduled for 2017/2018. To support business continuity and operational streamlining, the ROC program is providing an alternative solution until the EAM program is able to deliver the new asset management functionality to service the ICON business needs. PCAR Assumption: IMS_AS_01: No dual keying of incident record details across multiple Incident systems, with the exception of Lotus Notes. The **"Alternative IFMS Solution" was endorsed by the ROC SDRG (Oct 2015)** - Dual keying incidents into REM and IFMS to enable ICON to continue asset management (~ 25 per day) - Operations will manage incidents via REM - All ACTIVE legacy IFMS incidents initiated prior to the deployment of REM will NOT BE transitioned to REM - All legacy IFMS incidents will NOT be migrated to the new REM incident management system - Reporting will continue to be sourced from IFMS for asset and engineering management Caution: Reporting Consumers need to be cautious of 2 sources to avoid double counting and disparity of information sources - Assess IFMS situation in Release 3 along with EAM program releases
IMS_SC_03	All NEW security incidents occurring in and around the rail network will be created and managed in the NEW REM incident management system. All legacy security incidents initiated prior to the deployment of REM will be completed in the legacy SRS system. All legacy SRS incidents both active and completed will BE RETAINED and **NOT be migrated** to the new REM incident management system.
IMS_SC_04	All NEW infrastructure incidents occurring in and around the rail network related to management operational technology failures, including passenger information, control systems, communications (e.g. MetroNet, Condition Monitoring) will be created and managed in the NEW REM incident management system. To support business continuity and operational streamlining, the ROC program is supporting dual key processing until the EAM program is able to deliver the new asset management functionality to service the ICON business needs. The **"Lotus Notes Solution"** - Dual keying incidents into REM and Lotus Notes to enable ICON to continue asset management (~ 5 per day)

3 RA

	- Operations will manage incidents via REM - All ACTIVE legacy Lotus Note incidents initiated prior to the deployment of REM will NOT BE transitioned to REM - All legacy Lotus Note incidents will **NOT be migrated** to the new REM incident management system - Reporting will continue to be sourced from Lotus Notes for asset and engineering management Caution: Reporting Consumers need to be cautious of 2 sources to avoid double counting and disparity of information sources - Assess Lotus Notes situation in Release 3 along with EAM program releases
IMS_SC_05	Sydney Trains Mobile mIIM Delay report application used for train delay notifications to redirect integration from original target of IIMS to the new REM incident management system
IMS_SC_06	Sydney Trains Mobile mIIMS NIN application to be disabled from original IIMS system. NEW mobile application to be written to provide Sydney Trains staff with mobile capability to notify RMC of events across the Sydney Trains network.
IMS_SC_07	Sydney Trains Web browser Notifications application to be disabled from original IIMS system. NEW Web browser notification application to be written to provide Sydney Trains staff with web browser capability to notify RMC of events across the Sydney Trains network.
IMS_SC_08	The Sydney Trains SMS service provider currently ONLY provide outbound SMS communications using TIMS protocol via TIBCO. REM COTS product offers two way communications. - For Release 1, the outbound communications capability will be implemented with using the TIMS protocol - For Release 3, 2 way communications will be assessed for activation
IMS_SC_09	REM (2016.R1) customisation to support the requirements of the Sydney Trains ROC Release 1 are: • XSD inbound integration to REM • SIRI outbound integration from REM
IMS_SC_10	Existing systems integrated with existing Incident Management Systems (IIMS, SPAD, SRS) will continue for ACTIVE legacy incidents The NEW REM Incident Management System will be integrated with legacy systems and will be activated for Release 1 Technical Go-Live.
IMS_SC_11	"Person of Interest" details captured via Mobile Notification is not available to be integrated into the REM COTS product in REM 2016.R1. A **Tactical solution** for capturing unstructured "Persons of Interest data" is proposed for REM 2016.R1.
IMS_SC_12	Undertake product gap analysis on the legacy IIMS and SRS incident management systems with considerations to providing a solution to decommissioning the systems.
IMS_SC_13	Reporting Solution pending reporting requirements

	Release 1 is to ensure regulatory, external and essential internal reporting to continue to be available. (Category A & B) **Transitional (Hybrid) period -** Periodic reporting will be a combination of legacy and REM for the calendar and yearly reporting period of 34 months (standard 2 yrs + 10 months ROC deployment). **Business opportunity to simplify the reporting landscape** through assessing the current and future Internal and business unit specific reporting needs.

1.5.2 Out of Scope

ID#	Scope Item
IMS_OSC_01	Day-to-Day Intelligence System (D2DI) – any modifications to the application - D2DI is an analytical and information system used to capture, track and link intelligence about criminal activities across the rail network. Integration to D2D is within the Reporting scope.
IMS_OSC_02	Decommissioning of any Incident Management system which will no longer be used during the Day of Operations as a result of the new REM Incident Management system.
IMS_OSC_03	Integration with the DTTS system (Release 3 integration)
IMS_OSC_04	Integration with the CIMS system (Release 3 integration)
IMS_OSC_05	Integration with Voice Communication systems (VCS/CTI). Integrated dispatch system RFP is in progress.
IMS_OSC_06	Two Way SMS Integration is Out of SCOPE Release 1 is for Outbound SMS ONLY
IMS_OSC_07	REM iOS Mobile Client (Release 3 integration)
IMS_OSC_08	Voice Mail Integration (Future opportunity)
IMS_OSC_09	Capturing personal details of injured persons and security persons of interest in a structured format to support insurance claims and security investigation Tactical solution for Release 1 capturing Unstructured Person profiling data
IMS_OSC_10	Automated creation of incidents from BBT Operational Monitoring System be deferred to Release 3.
IMS_OSC_11	REM integration with 3rd Party consumers will be a SIRI format enabling the flexibility at the TIBCO layer to service the integration needs with the 3rd party. The 3rd party consumers and requirements are yet to be identified.

1.6 Assumptions

The solution has been developed on the following assumptions.

ID#	Assumption	Implication
IMS_AS_01	Migration from 'multiple source of truth' incident management masters is out of scope for this solution	Potential duplication of incidents impacting downstream legacy and reporting systems.
IMS_AS_02	Existing direct and indirect systems will not be enhanced unless identified for changes.	Scope increase and impacts to all legacy and go-forward direct and indirect systems and dependencies – interfacing systems, integration etc.

1.7 Constraints

The solution has been influenced by the following project constraints.

ID#	Constraint	Implication
IMS_CS_01	Buy not Build	Transform the business with a NEW way of working and leveraging the "best practices" proposed by the Vendor. The architectural guiding principles is to source a "fit for purpose" industry specific solution. Customisation or solutions outside of the product may evolve during the "Detailed Design phase"
IMS_CS_02	DTTS is not implemented in Release 1	DTTS integration - Release 3 – **PS#1** TLS-OTR will be the system source of truth for delays
IMS_CS_03	CIMS is not implemented in Release 1	CIMS integration Opportunity to provide early benefits to CIU ahead of Release 3 integration by sending consistent, accurate and timely incident information as an Email to CIU to leverage existing manual processing.
IMS_CS_04	The fixed Vendor Release Cycle defines earliest delivery dates for bi-annual releases.	Customisation of requirements will be deferred to align with next bi-annual product release cycles.

IMS_CS_05	The NEW iOS-version of the existing Android REM Mobile Client offering is not available for ROC Release 1	Sydney Trains Mobility and Web browser notification applications will be developed to handle the new Notification entity and associated data types for integrating with REM
IMS_CS_06	The strategic ST AWS environment hasn't been fully enabled as yet	Non Prod will be built into the existing ST AWS environment and moved once the strategic AWS is available
IMS_CS_07	The target Production Infrastructure platform has not been decided as yet due to NGIS delays	No known Target production infrastructure to deploy the new REM system.
IMS_CS_08	Details of injured people currently captured via mobile notifications is not available via the REM COTS product in REM 2016.R1.	A **tactical solution** is defined in IMS_SC_11 **Note:** Customisation will be available for REM Release 2016.R2 (proviso - specification details are signed off by 30.04.2016)
IMS_CS_09	The locally installed Web-Browser of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.	Vendor has recommended integrating the REM Client with the existing Sydney Trains enterprise GIS system as it provides a richer layering than the Vendors GIS capability. Further analysis will be undertaken during detailed design to assess the interoperability - **PS#13**
IMS_CS_10	Notification capture from multiple input channels (Sydney Trains mobile, Sydney Trains Web browser and REM Mobile) Information has been standardised	REM XSD defined for inbound notifications
IMS_CS_11	'Multiple sources of truth' incident management masters with dual keying in REM and legacy systems (IFMS, Lotus Notes)	Reporting from multiple Incident Management systems (Legacy and REM) Depending on the businesses reporting needs, reporting will be across multiple sources
IMS_CS_12	REM COTS product does not offer automatic incident creation.	Vendor recommendation that automated incident creation is NOT "best practices". Customisation to core product will be required. The organisation primary focus is safety critical and therefore careful consideration on impacts is key to the decision making process.
IMS_CS_13	REM is only able to connect to Microsoft Active Directory server	REM will not be able to connect to the Sun / Oracle IAM server.

	(via LDAP protocol).	

1.8 Dependencies

The solution is dependent on the following items.

ID#	Dependency	Impacts
IMS_DP_01	Implementation of technology infrastructure environments	Delay in Project delivery
IMS_DP_02	"To be" business processes are agreed and signed off during detailed design to enable opportunities and business solutions to streamline interaction of business and technology within the ROC program and also downstream users of incident information	Delay in defining solution in the context of this document.
IMS_DP_03	Vendor Software available for Configuration, Testing, User Training and Deployment.	Delay in Project delivery
IMS_DP_04	Existing systems available for Configuration, Testing, User Training and Deployment.	Delay in Project delivery
IMS_DP_05	Programs of work in progress/pipeline across TfNSW/Sydney Trains Medium Impact – Condition Monitoring Strategy	Condition Monitoring is within the scope for both the EAM and ROC project. The risk for both projects is the potential duplication or a gap for supporting fault maintenance and mitigation of potential incidents related to-Condition Monitoring. Project teams has initiated discussions to raise awareness and collaboration to defining clear delineation of accountabilities and responsibilities for "faults" and "incidents" for Condition Monitoring to avoid having business rules embedded within both systems resulting in larger operational expenditure and support. The key question to be addressed is the delineation of an "event" as either or both incident and/or fault and the collaborative management of the event to provide a holistic streamlined solution – **PS#6.**

		ROC has identified BBT (Bearing and Brake Temperature) condition monitoring within the ROC Release 3 scope.
IMS_DP_06	Programs of work in progress/pipeline across TfNSW/Sydney Trains Medium Impact – Workforce Management	Inability for Operations, Response teams and Train Crewing to enable workforce capacity management due to multiple workforce systems with time latency resulting in inaccurate rostering and unavailability of "resource availability" information REM will not be able to effectively identify and contact appropriate Incident Responders as part of Incident Management processes – **PS#8.**
IMS_DP_07	Programs of work in progress/pipeline across TfNSW/Sydney Trains Medium Impact – Content Management	Inability for Operations and support staff to enable greater capability to enact alternative journey plans and/or incident disruption mode. - ACJP impacts on alternative journey procedures - Sophia impacts on correct sources/versions of the work practice procedures and supporting and Incident Management documents
IMS_DP_08	EAM program to deliver TIBCO packages to isolate impact between Legacy Incident Management systems (IIMS, SRS, IFMS) and EAM-related systems such as FMBS, Reliance Rail etc that will be replaced by the EAM program	Two major programs of work developing NEW core incident and asset schema structures and altering related integrations

1.9 Decisions

The following decisions supporting the ROC Release 1 solution is based upon a very aggressive schedule and the project analysis and design phases (requirements, designing and scoping) have been executed in parallel.

ID#	Description	Decision
IMS_DS_01	No dual keying of incident record details across IIMS & SRS Incident systems, with the exception of Lotus Notes and IFMS.	Program endorsed – July 2015
IMS_DS_02	The locally installed Web-Browser of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.	Vendor has recommended integrating the REM Client with the existing Sydney Trains enterprise GIS system as it provides a richer Sydney Trains specific layering than the Vendors generic GIS capability.
IMS_DS_03	Currently there is a 2 way integration between FPE and IIMS to trigger SPAD incidents for investigation and attribution to "close" the incident. The FPE/SKMS and related applications are being assessed to simplify the Safety, Health and Environment business and technology landscape. The SHEM business case (in progress) is to capture safety and environment related incidents irrelevant of their operational impact.	Transforming the businesses processes supported by a REM COTS product with considerations of the moving technology landscape. The decision is to trigger a notification to an investigator to manually manage incident investigations for attribution.
IMS_DS_04	Decommission legacy Incident Management Systems and its integration points is not within the ROC Project scope.	To support in simplifying the technology landscape the transitioning process to enable the decision on the future of the legacy IMS system are: 1. **Product gap analysis** undertaken on the legacy IMS systems (IIMS, SRS) to assess the functionality impacts 2. **Retire** functionality to disable business usage 3. **Retain** application to enable business enquiry purposes 4. **Decommission** application to enable removal from business USAGE and cleansing the technology environment (migration and archiving).

<table>
<tr><td>IMS_DS_05</td><td>Critical faults created in FMBS related to Waratah A-Sets (Operating partner SLA contracts) automatically generate incidents for resolution.</td><td>Critical faults created in FMBS related to Waratah A-Sets are automatically routed to REM via notifications for assessing within REM for incident generation or appending to an existing incident for processing.</td></tr>
<tr><td>IMS_DS_06</td><td>Receiving automated notifications from Condition Monitoring systems</td><td>Automated BBT notifications has been deferred to Release 3.

Reasons:
- Ensure Safety Assurance is assessed and verified
- Clear accountability and responsibility model of automated Condition Monitoring notifications
- Business rollout alignment</td></tr>
<tr><td>IMS_DS_07</td><td>Support business in transforming operational incident management and streamlining business processes through simplification of a NEW consolidated incident lifecycle framework from notification→ incident initiation → collaboration → resolution → causes → attribution and measurements.</td><td>Adopt a new Incident categorisation aligned to Universal delay code standards (UIC 450-2)

Implement operational attribution process in REM

Transformation of NEW incident coding in REM and RETAIN OLD incident coding in Legacy systems.

Transformation of organisational REPORTing</td></tr>
<tr><td>IMS_DS_08</td><td>To support the business in transformation across a complex technology legacy landscape; REM is the go-forward collaborative incident management system supported by a multitude of diminishing incident management reporting systems.</td><td>TIBCO is the integration layer to support the business logic and transformation of REM interaction with legacy systems as well as ensuring the existing legacy system integrations and functionality are not diminished.

<table><tr><th>Options</th><th>REM</th><th>Translation</th><th>Interfacing Systems</th><th>Translation</th><th>Reporting</th></tr><tr><td>1</td><td>New</td><td>Y</td><td>Legacy</td><td>N</td><td>Legacy</td></tr><tr><td>2</td><td>New</td><td>Y</td><td>Legacy</td><td>Y</td><td>Hybrid</td></tr><tr><td>3</td><td>New</td><td>N</td><td>New</td><td>Y</td><td>New</td></tr></table></td></tr>
<tr><td>IMS_DS_09</td><td>Common Transport B2B interaction protocols</td><td>The REM Release 1 will use:
- SIRI-SX for situation management
- SIRI-GM for attribution management</td></tr>
<tr><td>IMS_DS_10</td><td>The current integration with SMS gateway serves the businesses needs and is initiated via ICFMS to TIBCO</td><td>For REM Release 1, integration will be leveraging existing TIMS protocol via TIBCO

The REM Release 3 will be a reassess to the integration</td></tr>
</table>

	and through to SMS Provider REM offers a two-way SMS communication enabling collaborative incident management with personnel which allows immediate feedback in regards to the message being delivered, read and how the recipient has replied to it.	with the SMS gateway to enable the delivery assurance of a collaborative communication capability.
IMS_DS_11	Leverage Sydney Trains existing input channels to enable front line staff with mobile or web browser access to communicate electronically an event on the Sydney trains network.	Sydney Trains strategy of providing Front line staff with mobile capability has enabled the organisation to transition to an omni-channel communication approach. The Sydney Trains staff is progressing adapting to the electronic communication capability through the current NIN Portal and (mIIMS) Mobile NIN. The decision to leverage the existing input channels is: - To leverage the adoption and adaption by the Sydney Trains staff with a NEW look NIN Portal and Mobile NIN that is compatible with the REM COTS product. - Enables early solution delivery as the REM product notification capability via the REM Mobile will not be available till 2017 - Provides the organisation with solution flexibility and Opex infrastructure and licensing decisions
IMS_DS_12	The REM product has a clear focus in a "fit for purpose" incident management systems and deem reporting unique to each organisation and its needs, therefore the REM product offers 8 basic reports. The Release 1 REM solution provides a Shadow data base which mirrors the production DB to provide an operational data store or report server. The ROC program must ensure existing business reporting is not impeded and ensure business reporting continuity for regulatory reporting.	The Release 1 REM solution provides a clear delineation from the core incident management solution with the REM shadow database as the initiating source for the reporting solution. The decision is to provide a reporting solution that meets the current business requirements as well as support the business in transforming and achieving benefits through organisational behaviours and a difference performance measurement – Customer Delay Minutes (CDM). The ROC program has an opportunity to simplify the reporting landscape with the support of the business to: - Leverage Sydney Trains BI reporting tools to enable the business to "undertake self-service reporting" needs that could be presented in a format to suit a medium of devices e.g. dashboard on tablet - A robust controlled reporting strategy managed by the ICT to ensure compliance and regulatory obligations. - Provide Business Views on the REM Shadow Database to ensure the information sourced is meaningful and complete to remove the complexity of

		business sourcing data elements without the clear understanding of the business object and provide information reporting consistency across business units, directorates and organisational levels.

1.10 Architectural Goals

1.10.1 Business Architectural Guiding Principles

Principle	Goal	Description
APB_01	Fit for Purpose - Use applications to deliver capability for which they were intended.	REM COTS offering with OOTB and configuration capability that is "Fit for Purpose"
APB_02	Reuse - Reuse business processes, capabilities and systems wherever possible	The ROC program is classified as transformational and likely to focus on changes to business process and systems where possible to align with new operating model and associated capabilities. The strategic alignment is to provide a single platform for incident management and leverage capabilities in existing investments where appropriate.
APB_03	Simple and measurable processes	Bringing in best practices to assist in transforming the business with introducing streamlined and simplified new processes and workflows
APB_04	Long-term efficiency of the transportation systems	The solution shall support the following transport data interchange standards: - GTFS/GTFS-R - SIRI (v1.4). Transmodel has been selected as the standard to adopt for data as a reference standard. The solution aligns with Transport industry standards Delay Codes model - UIC 450-2.
APB_05	Easier exchange of information – Common industry interaction	The solution accepts business interactions and maps to the Transport industry data integration standards e.g. GTFS/GTFS-R - SIRI (v1.4)
APB_06	Design for Data Reuse	Reuse data currently being used by the business to report within the organisation and to regulatory bodies. Leverage consistent collaborative Master and Reference data sources between the ROC systems – DTTS, CIMS, REM

APB_07	Common industry language – align business and information with industry standards.	All information held in the core Transport systems and business will be aligned consistently with common industry understanding of Transport terms and definitions Where industry standards, terms or definitions are not appropriate or are ambiguous then a specific implementation will be driven by the ROC program. The solution will use the data pertaining to the standards for enabling consistency and collaborative B2B communications of data across the industry and reduction of exception handling.
APB_08	Support a delighted customer experience	The solution ensures customer experience has been considered and leveraged to enable existing or new outcomes to be implemented and NOT deprecated where it is appropriate to do so
APB_09	Deliver a quality solution which drives the right behavioural change in an agreed timeframe	The project will focus on communication, behaviour and change management throughout the release to ensure it meets the stakeholder's expectations, delivering key milestones from adoption to implementation to adaption of interactions on realistic agreed timeframes.
APB-10	Actions should occur as early in the workflow as possible	The solution ensures identification, validation and reporting of errors will occur as close to the source of initiation to enable exceptions to be detected and addressed as early in the process as possible. E.g. if the detail entered is 'incomplete' when the user is attempting to update it, the user will be alerted to their error as early as possible before the change transmission can take place. Validation should not be repeated if it adds no further value. There may be legitimate circumstances whereby actions are required to be performed multiple times for different reasons and this principle does not preclude this e.g. values checking will occur at business user interface for usability; then the business logic for service reuse; and at the backend database for data integrity.
APB-11	Configurable – Business rules to be configurable where possible	The solution ensures configuration by the business where supported by the COTS product" i.e. REM does not have a configurable business rules engine.
APB-12	Design the solution, having regard to	The solution ensures minimal impact to existing systems therefore achieving the projects

	the cost/benefit return on investment and be respectful of, but not limited by the costs.	objectives of minimizing solution costs and changes to existing systems.

1.10.2 Information Architecture Guiding Principles

Principle	Goal	Description
API_01	Source of information	The REM system data is the Source of Truth for Incidents The Master and Reference data for the ROC program are defined in the Data Management Strategy.
API_02	Integration – standards	All integrations are aligned with Sydney Trains Architectural integration guiding principles
API_03	Data Quality	Management of systems and processes to focus on data quality that is implemented and maintained to ensure that both the actual and potential value of enterprise data assets is optimised
API_04	Reuse Data	Data will be reused where appropriate New data will be defined within existing systems only where it is appropriate to do so. The ROC program is classified as transformational and will support the following transport data interchange standards: - GTFS/GTFS-R - SIRI (v1.4). The Incident Coding (categories and delay codes) are NEW to the REM incident management system and will be transformed in the TIBCO layer to existing integrated systems.
API_05	Common Definitions	Consistency of Transport standard's defined ensuring common definitions.
API_06	Data Master	Data should be mastered where it is appropriate to do so and this will apply to the 3 ROC technology systems to provide strategic ROC solution that leverages a common data source
API_07	Data Security	Data deemed to require authorised access is protected by adequate security measures All personal or sensitive identifiable information is

		to be secured and the solution must comply with Sydney trains security policy and standards Risk assessment and data classification is pending finalisation by Security Architect and signoff by the Business owner.
API-08	Consolidated Repository	Data will be shared with other applications as required to support business processing Reporting and warehousing of data is pending reporting requirements to enable a reporting solution that meets the businesses needs and is strategically aligned.
API-09	Data assets are defined	Data profiling during Technical analysis will provide meta data that could be utilised by all users and applicable enterprise-wide for Sydney Trains
API-10	Data flow is uninhibited	Latency of key enterprise data flows, caused by manual interventions and other process bottlenecks, is removed wherever possible

1.10.3 Information Systems Architectural Guiding Principles

Principle	Goal	Description
APS_01	Simplify – Keep our system environments as simple as possible, decommission redundant systems wherever possible.	Sydney Trains Architectural Guiding principle is minimal or no change to legacy systems. Decommissioning is out of scope for REM Release 1 - IMS_OSC_02
APS_02	Avoid splitting discrete capabilities across multiple systems	Functionality is being logically assigned to the most relevant system that is capable of providing that functionality.
APS_03	Buy vs Build – Buy commodity, build for competitive advantage	COTS offering is fit for purpose for Incident management.
APS_04	Integrated – Expose and consume services using a "Service Oriented Architecture" where possible	System Integrator is involved with the system integration to ensure that the most appropriate integration is performed that aligns with Sydney Trains integration patterns.
APS_05	Extending Application Functionality	The solution proposes minimal impact and changes to the existing systems, therefore extending functionality will be based upon the requirement, business impact and cost benefit return the business would like to undertake.

APS_06	Alignment to the IT target state roadmap	The solution supports the consolidation of existing platforms which is in line with the TfNSW/Sydney Trains IT target state.
APS_07	Application Re-use	Where possible existing applications will be reused
APS-08	SOA Compliant application design	Ensure loosely coupled architecture, so that services can be reused.
APS-09	Application Ease-of-Use	Applications ease of use has been considered throughout the design process to ensure operational risk to business has been minimised and managed so users are able to fulfil their work responsibilities effectively, efficiently and with satisfaction Human Factors activities and considerations for safety assurance is being undertaken as an independent activity.

1.10.4 Technology Architecture Guiding Principles

Principle	Goal	Description
APT_01	Secure – Implement security following the TfNSW/Sydney Trains Information Security Policy	Provide access to authorised users in a timely manner Proposed application must comply to TfNSW/Sydney Trains security Policies and Standards
APT_02	Scalable – Able to scale all layers of the applications and technology stack to meet business needs	The solution is to only enhance systems where appropriate to minimise impacts and duplications of enhancements to systems. The solution should have the capacity to be scalable to enable future business needs e.g. capability consolidation, performance and volume stress testing.
APT_03	Availability – Duplication with failover for all relevant layers of the applications and technology stack	SLA's of existing systems is maintained unless agreed and approved. When the solution is implemented, all system owners will monitor and ensure that system does not diminish existing SLA's as agreed and approved.
APT_04	Current – Maintain product and version currency for all underlying software and tools. Manage risk for products that are not main stream.	The solution proposed aligns with the TfNSW/Sydney Trains technology strategic direction.

		Architectural Exemption Approval pending Silverlight is deprecated technology. The future browser requirements do not support Silverlight Plugin (latest Chrome & IE).
APT_05	Standard – Use hardware and software based on TfNSW/Sydney Trains technology standards and avoid specialist system infrastructure	The solution defined in the technical design documentation is compliant with the TfNSW/Sydney Trains standards.
APT_06	Virtualised – Ability to virtualise all appropriate layers in the application and technology stack	The solution defined in the technical design documentation is compliant with the TfNSW/Sydney Trains standards. The TfNSW NGIS technology stack is still in discussions. Currently the Sydney Trains AWS private cloud is being implemented for the non-production environments.
APT_07	Reduce complexity	The implementation of this solution over time will provide the business and technology the ability to reduce the number of core Transport systems in use; resulting in improving and simplifying the technology landscape.
APT_08	Increase Stability and Reliability	The solution aids in decommissioning legacy and redundant systems; thus reducing the number of moving components that can break and improve the reliability of the IT environment as a whole
APT_09	Focus on Standards and Technology Interoperability	Solution Integrator is involved with the system integration to ensure that the most appropriate standards and interoperability is addressed. The solution to be implemented will be approved by the ROC program.
APT_10	Increase Technology Independence	Reducing the number of technical components in use (many of which are out of support, now no longer mainstream or redundant) will improve the technology independence of the organisation. The strategic direction has placed dependence on iOS which prevents use of COTS Android product.
APT_11	Responsive Change Management	The solution has been designed with configuration flexibility. All development releases at each key milestone deployed will need to ensure that the scheduled work continues to support the solution

		configuration flexibility.
APT_12	Create Sustainable IT Environment	By reducing the number of technical components and providing a solution with an overarching centralised layer across the core Transport systems, the IT environment will be vastly simplified which will lead to more sustainable implementations.

2 Business Architecture

2.1 Incident Overview

2.1.1 Terminology

The terminology in the Incident Management area can generally be interpreted in many ways. Any reference to the terms listed below should be interpreted according to the supplied definition.

Day of Operations

The people, processes and systems whose functions, actions and performance **directly impact the service that is experienced by the customer on the same day.**

Notification

An abnormal scenario relating to the rail network that has been detected and requires an assessment on the Day Of Operations (detection and assessment can be manual or automatic)

Incident

An incident is an event distinguished by that it fact that it causes a process to fail. A process is considered to have failed if it does not attain a pass grade on at least one pre-defined measure.

Before an incident occurs it might be identified as a risk. When it occurs an incident will, by definition, cause a process to fail. Immediately following an incident there will be an immediate concern to prevent related processes from failing and safety being compromised. At this stage the focus is on containment and this may create intense and urgent activity aimed at minimising consequences, rectifying damage caused and, restoring service (as applicable).

Once an incident has been contained and the most pressing damage has been rectified the focus shifts to the root cause of the problem that caused the incident. The root cause may be investigated and corrective actions taken to ensure that any uncovered problems do not trigger a similar event in the future.

In its final stage of life an incident becomes a statistic that is considered when analysing organisational performance and identifying risks that should be subject to mitigation.

Service Disruption

A service disruption is where the quality of service as experienced by the customer on the Day of Operations falls unacceptably below the standards for Timeliness, Convenience, Accessibility, Comfort, Cleanliness or Information that is provided by the Scheduled Working Timetable, fully available facilities and a properly maintained environment

Risk

The term "Risk" is sometimes used to refer to a potential cause of failure, sometimes to the likelihood of a failure occurring and in other circumstances it refers to the cost of the failure.

The following types of risks are subtly different but enormously different in case of realization.

Operational Risk

Operational risk is the potential for processes to not produce the desired outcome. This risk is dependent on the challenges involved and the resources available in achieving the desired outcome. The factors affecting the level of operational risk include:

- The difficulty and complexity of the process.
- The resources available including people and equipment.
- Process maturity including previous exercise and controls on risks and consequential risk.

It should be noted that many failures in equipment and process may occur but the process still produces an outcome that is successful as measured by all the relevant KPI.

Hazard

A Hazard can be defined as a **source of potential harm**. A hazard increases the probability that an operational risk will be realized – i.e. that a failure occurs.

Conditional Failure

"Conditional failure" is a term used in Asset Management to refer to **a condition that has arisen** in an asset that should be addressed in order to lower the risk of failure. If rolling stock is due for a service or the brake pads no longer has the prescribed minimum thread it has a conditional failure.

Functional Failure

"Functional failure" is a term used in Asset Management to refer to the **failure of an asset to fulfil its function.** A rolling stock with a bogie issue is a functional failure as it supports the rolling stock vehicle body and provides stability on the track.

2.1.2 Incident management Life Cycle

The diagram below represents stages in the lifecycle of an Incident and the ROC phases.

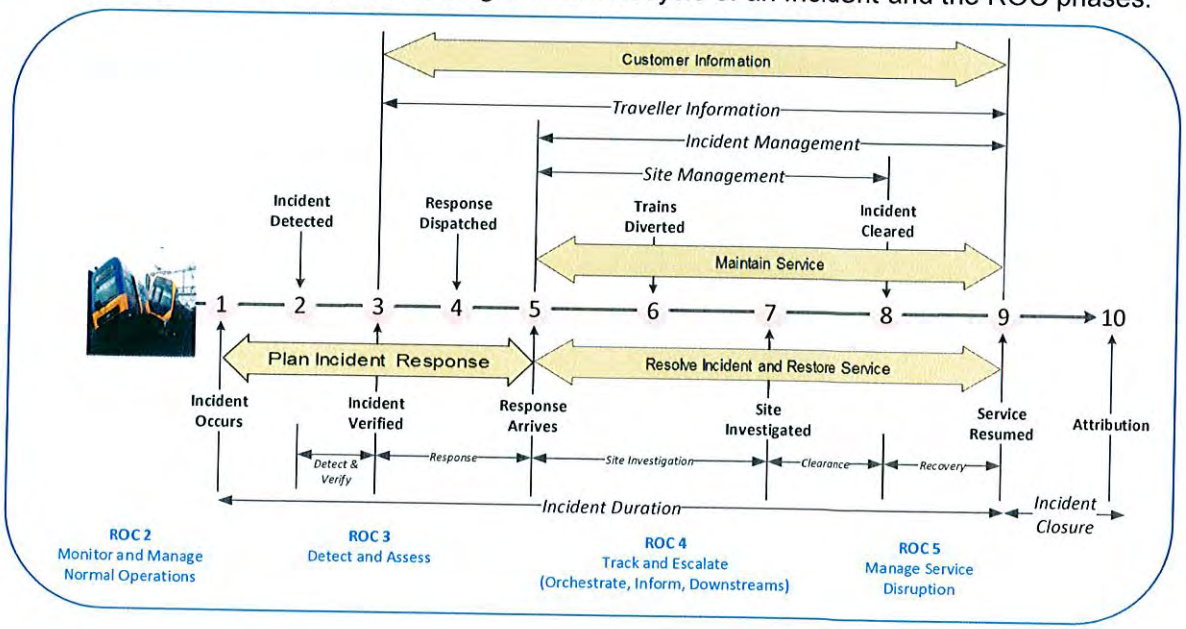
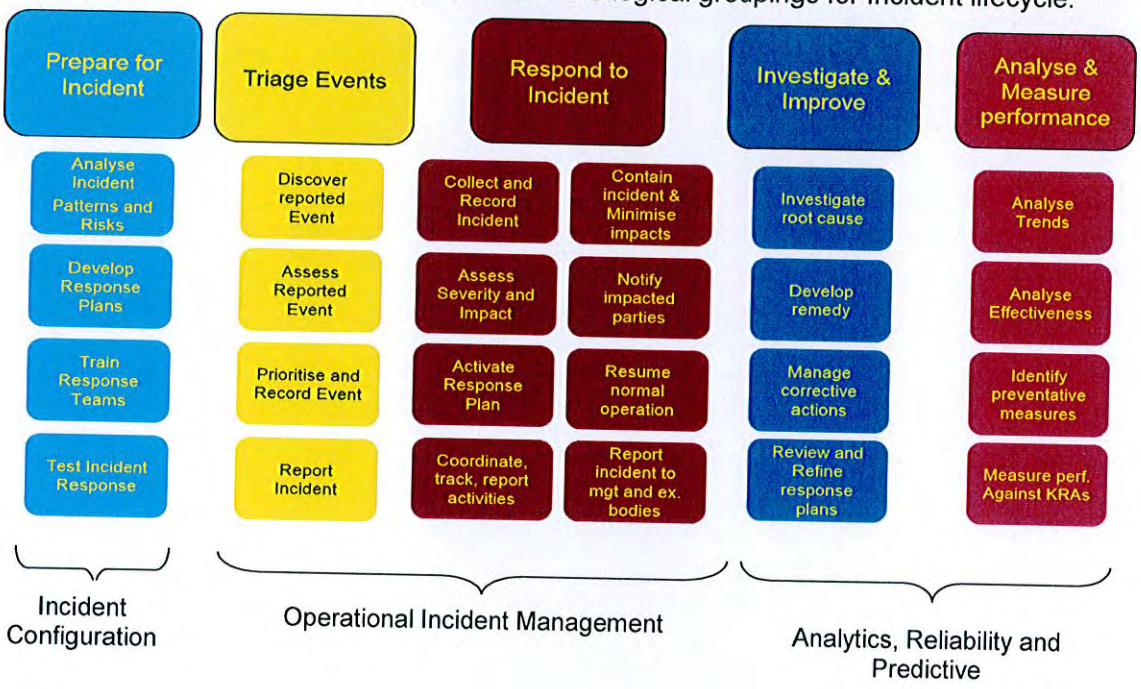


Figure: Incident Management Lifecycle

The Incident Management End to End process must remain a priority to guarantee any changes are future proof.

2.1.3 The Integrated Functional Model

The Integrated Functional Model below shows the logical groupings for Incident lifecycle.



2.2 Incident Classifications

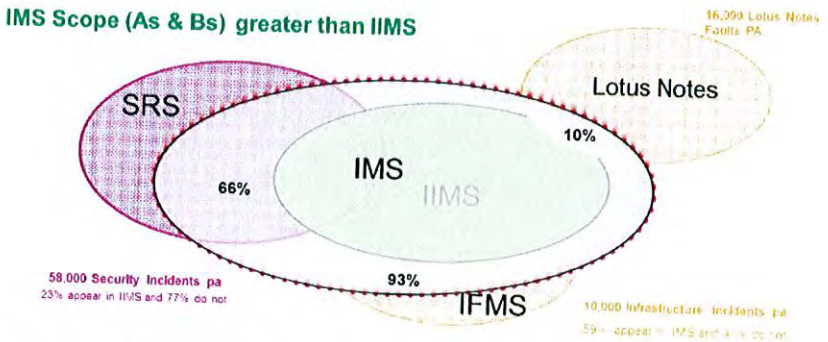
Incident management is constrained by classifying incidents according to several aspects:

1. The incident management lifecycle.
2. The type of risk that leads to the incident.
3. Type of impact: positive or negative. An incident with a positive impact will enhance a process's performance in at least one of the success factors by which it is assessed.
4. Pro-active or reactive incident management. Pro-active incident management has a focus on risk management and controls where-as reactive incident management focuses on containment and restitution.

The table below identify the ROC incident types considered as mandatory and optional for the ROC scope:

REM	Category	Event Types
Mandatory	A	Any event that causes a train *service disruption* or has the potential to cause a train *service disruption*.
	B	Any event that requires 'on the day' coordination of functional units that will co-locate to the ROC **or** the coordination of external agencies.
Discretionary (based on magnitude)	C	Any other event causing a '*service disruption*' (excluding A or B above). *1
Optional (based on convenience)	D	Any other event requiring action or attention on the day of operations (excluding A, B or C above).
	E	Any other event worthy of recording for follow-up action or attention ***not*** on day of operations.

The analysis undertaken on the incidents from the 4 legacy incident management systems (IIMS, SRS, IFMS and Lotus Notes) provides insights to the alignment with the ROC IMS Scope incident types.



- The minimum ROC IMS Scope is significantly greater than IIMS
- Nearly all (93%) IFMS are worthy of recording on IMS
- The majority of future SRS incidents (66%) are worthy of recording on IMS
- Only a small minority of Lotus notes incidents need to be recorded on IMS.

Note: remaining 34% of SRS incidents are non-operational incidents and considered within the ROC Release 1 scope.

	IIMS	SRS	IFMS	Lotus Notes
IMS Function & Benefits	Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, faster incident resolution and service restoration (15% reduction in initial delay duration). Opportunities for 'day of operations' role re-design and consolidation (opex efficiencies)			
IMS Incidents pa	~98,000			
A	55,844 *1	14,436	9212	*1,600*
B	0	16,356	64	*0*
C	0	576	0	*14,400*
D	0	14,712	636	*0*
E	1083	108	44	*0*
Other	0	11,952 *2	36	*0*
Legacy Incidents pa	**0**	**0**	**0**	**16,000**
Notifications	Predominantly via mobile capability (i.e. mIIMS, mFS etc.) & minimise phone calls.			
Raise Incident	Incident Manager in control centre(s). Consolidated 'cause codes' (UIC).			
Collaboration	Control centre(s) & field staff via IMS Portal			
Review & Report	IMS system generated reporting (COTS), operational & new DOO BI reporting			

The red border frames the incidents which are considered in scope for ROC Release 1.

*1 23% recorded train delays >= 5m
4% recorded train delays < 5m
(remaining 73% had the potential to cause delays

*2 No longer recorded in SRS or IMS

Sample IIMS incident data

Event Type & Causes

Sydney Trains	98316
(SYD) OPERATIONS DIRECTORATE	98316
ELEMENTS FACTOR	512
EXTERNAL FACTOR DAMAGED	326
MANAGEMENT/PROCESS FAILURE	58599
SECURITY ALERT / POLICE OPERATION	8597
ASSAULT ON TRAIN	1012
ASSAULT ON/NEAR STATION	357
BEHAVIOUR ANTI-SOCIAL - ON TRAIN	4347
BEHAVIOUR ANTI-SOCIAL - ON/NEAR STATION	914
BOARDING/ALIGHTING MOVING TRAIN	210
DOORS HOLD OPEN	92
OBJECT/ANIMAL ON TRAIN	27
POLICE OPERATION ON RAIL CORRIDOR	348
POLICE OPERATION ON TRAIN	266
POLICE OPERATION ON/NEAR STATION/PREMISES	881
THEFT FROM PERSON ON TRAIN	143
TRESPASS	18553
HIT BY TRAIN-FATALITY SELF HARM	8809
HIT BY TRAIN-INJURED-NOT SELF HARM	105
HIT BY TRAIN-INJURED-SELF HARM	891
TRESPASS IN DANGER ZONE ON STATION	2277
TRESPASS IN DANGER ZONE RAIL CORRIDOR	6471
VANDALISM	11729
ALARM ACTIVATED	579
DOORS DAMAGED/INTERFERED	3349
EXCRETA ON TRAIN	343
GATES / FENCES DAMAGED	17
GRAFFITI ON CREW COMPARTMENT	776
GRAFFITI ON TRAIN	499
INTERFERENCE WITH OTHER EQUIP IN CREW COMPARTMENT	549
INTERFERENCE WITH OTHER EQUIPMENT	228
INTERFERENCE WITH SIGNAL EQUIPMENT	198
OBJECT/ROCKS THROWN AT TRAIN	468
OBSTRUCTION/DAMAGE TO RUNNING LINES	206
OBSTRUCTION/DAMAGE TO SIGNAL EQUIPMENT	1479
PANELS/FITTINGS/SEATS - INTERNAL	768
THEFT FROM PREMISES/INFRASTRUCTURE	128
WINDOWS DAMAGED/BROKEN/MISSING	2142

IIMS Data (Yr 2014)

Row Labels	Total
Customer Service	64767
NSW Trains	21460
(NSW) CUSTOMER SERVICE DELIVERY	21460
Sydney Trains	43307
(SYD) CUSTOMER SERVICE DIRECTORATE	43307
BUILDING FACILITIES	656
MANAGEMENT/PROCESS FAILURE	4602
PASSENGER BEHAVIOUR	38049
Customer Service Directorate	1680
Sydney Trains	1680
(SYD) CUSTOMER SERVICE DIRECTORATE	1680
MANAGEMENT/PROCESS FAILURE	21
OPERATIONAL ERROR	63
PASSENGER BEHAVIOUR	1596
Maintenance	83743
NSW Trains	24456
(NSW) ROLLINGSTOCK	24456
Sydney Trains	158327
(SYD) MAINTENANCE DIRECTORATE - FLEET	57296
(SYD) MAINTENANCE DIRECTORATE - INFRA	101031
Maintenance Directorate	819
Sydney Trains	819
(SYD) MAINTENANCE DIRECTORATE - FLEET	168
(SYD) MAINTENANCE DIRECTORATE - INFRA	651
NSW Customer Service Delivery	21460
NSW Maintenance Directorate	168
Operations	98316
Sydney Trains	98316
(SYD) OPERATIONS DIRECTORATE	98316
ELEMENTS FACTOR	512
EXTERNAL FACTOR DAMAGED	326
MANAGEMENT/PROCESS FAILURE	58599
SECURITY ALERT / POLICE OPERATION	8597
TRESPASS	18553
VANDALISM	11729
Operations Directorate	2436
Sydney Trains	2436
(SYD) OPERATIONS DIRECTORATE	2436
MANAGEMENT/PROCESS FAILURE	315
SECURITY ALERT / POLICE OPERATION	21
TRESPASS	1953
VANDALISM	147
Other	17815
Transport Services	306
Infrastructure	34785
Grand Total	403314

Event Type & Causes

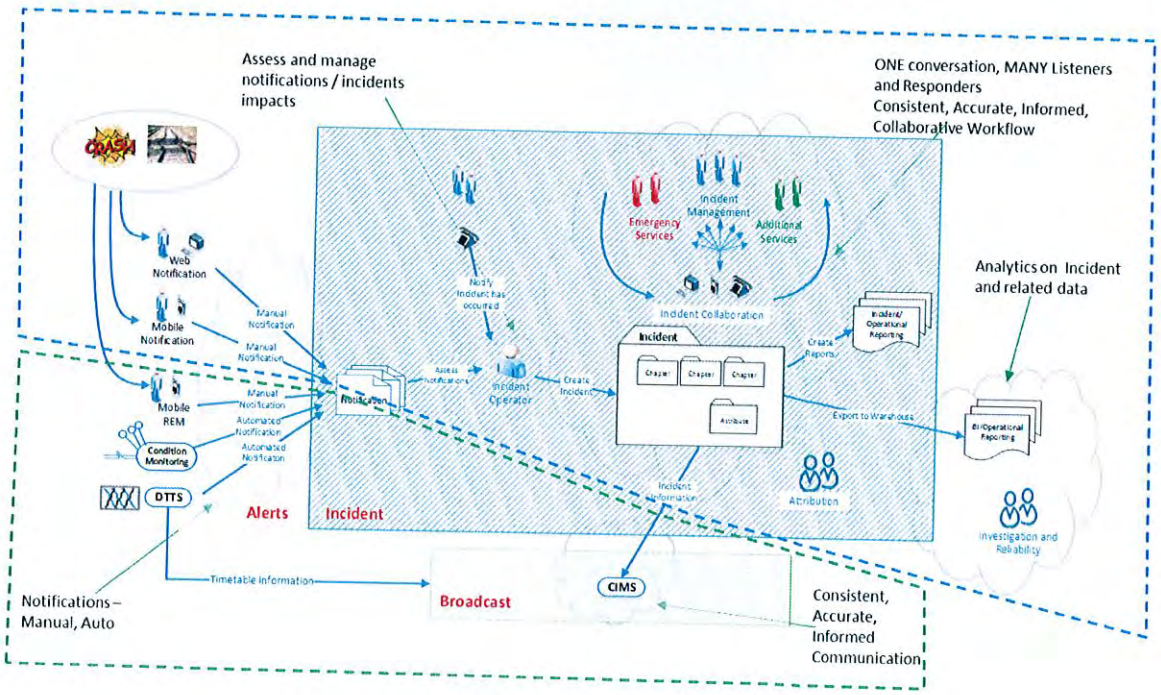
(SYD) CUSTOMER SERVICE DIRECTORATE	43307
BUILDING FACILITIES	656
LIFTS / ESCALATOR ISSUE	471
STRUCTURE DEFECTIVE	156
TOILET FAULTY/HEADER TANKS/WATER PIPE	29
MANAGEMENT/PROCESS FAILURE	4602
CAR NOT CLEANED	91
DECANT	34
FAILURE TO TAKE CORRECTIVE ACTION	405
HELD/DESPATCH TRAIN WITHOUT AUTHORITY	92
INCIDENT REPORTED - NOTHING FOUND	186
INFORMATION - TRAIN WORKING - INCORRECT/NONE	1733
PASSENGER INFORMATION INCORRECT	164
ROSTERING ISSUES	14
SIGNAL/SET ROUTE/ROW - SLOW/FAILURE TO CLEAR	73
STAFF TO TOILET	49
TRAIN ADVANCED OUT OF ORDER	208
TRANSPOSITION FAULTY	1553
PASSENGER BEHAVIOUR	38049
ALARM ACTIVATED	21
BOARDING/ALIGHTING FINE WEATHER	4043
BOARDING/ALIGHTING WET WEATHER	2126
BOARDING/ALIGHTING-SPECIAL ASSISTANCE REQUIRED	3275
CAUGHT IN DOORS AND DRAGGED	14
CAUGHT IN DOORS/HOLD/OPEN	551
FELL BETWEEN PLATFORM AND TRAIN	1025
FELL FROM TRAIN	76
FELL FROM/ON PLATFORM	739
FELL ON TRAIN	3831
INCIDENT REPORTED - NOTHING FOUND	176
LOST PROPERTY	95
OVERCARRIED YARD/MAINTENANCE CENTRES	83
RUBBISH/LIQUIDS IN CAR	871
SICK ON STATION	18
SICK ON TRAIN	19932
UNSAFE OR CARELESS BEHAVIOUR	1228

2.3 ROC Business Solution Overview

The IMS Release 1 solution proposes to deliver the business with "**A more centralised incident capture and distribution process for all staff to identify an integrated process to collect, communicate and classify all incidents for consistency, visibility and prompt action across Sydney Trains".**

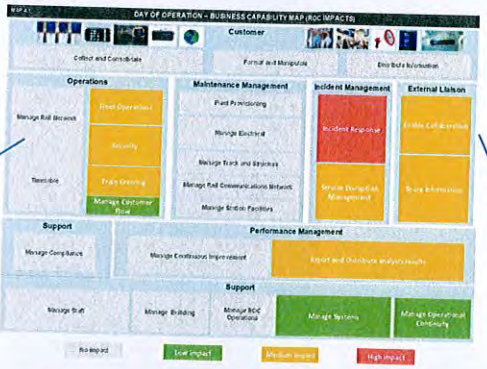
The solution proposes to provide the business with:

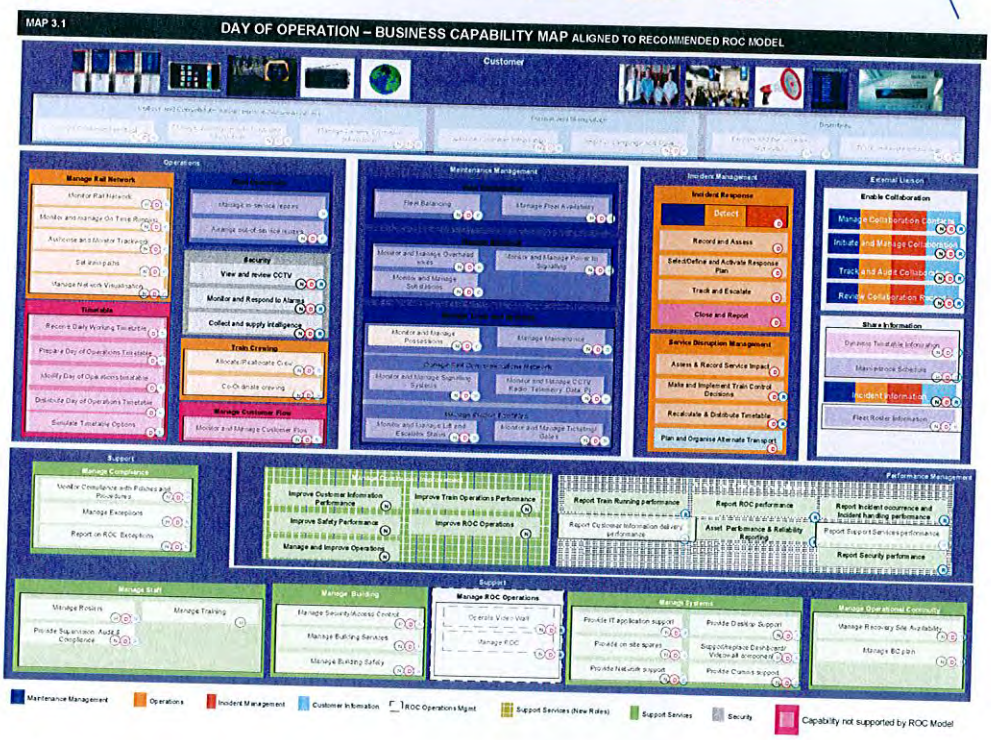
1. Ability to capture alarms, alerts and notification of potential incidents
2. Capturing and assessing incident information in near real-time and linking to timetables, trains, trips, lines, network (Release 1 is Manual & Release 3 is integration with DTTS)
3. Capturing incident location information against rail geography and assets
4. Supporting templates/patterns for types of incidents (signal failure, power failure, train faults, sick passengers etc.)
5. Ability to automatically link service delay and consequential delays to incident (Release 3)
6. Provide technology enabled support of pre-configured workflow for type of incidents as defined in incident response plans for each type of incident
7. Provide efficient, effective and consistent technology capabilities to enable collaborative incident management resolution
8. Provide targeted communication of services and incident information
9. Provide technology enabled support for identification of incidents
10. Escalating when progress reaches pre-defined thresholds
11. Provide timely, relevant and consistent incident information to Customers during delays (Release 1 is email notification to CIU for BAU process & Release 3 is integration with CIMS)
12. Provide incident status in real-time and display on OVDS (Dashboard – Release 4)
13. Providing incident information to downstream systems (customer information, Train Control Decisions etc. in real-time.
14. Provide incident information to enable Organizational Compliance, Legislative, Operational and Business Unit Reporting



2.4 Business Capabilities

The Business Capability areas of impact relevant to the key 'Day of Operations' business processes impacted by ROC program for Incident Management are highlighted:





Operational Impacts

1. Enabling transformational change in management of incident that cause disruption to "Day of Operations" from current practice of performing post incident/event data capture forward to a proactive collaborative and efficient management of incident resolution.

2. Provide a single source of truth of incident management information for customers and staff in near real-time.
   Significant streamlining Incident Management processes, reducing number of telephone conversations for obtaining incident information, enabling "Decision Makers" to concentrate on resolving disruptions and restoring services efficiently.

3. Pre and Post incident processes and capabilities will continue to be conducted in current processes.
   Capturing incident information will shift from post incident activity to near real time activity to support "Day of Operations".

4. Incident management workflow, incident categories, checklists and input fields can be flexibly configured

2.5 Business Processes

The ROC program objective is to address a **Service Disruption** is where the quality of service as experienced by the customer on the Day of Operations falls unacceptably below the standards for Timeliness, Convenience, Accessibility, Comfort, Cleanliness or Information that is expected of the Scheduled Working Timetable, fully available facilities and a properly maintained environment.

The ROC Release 1 will provide a new incident management capability that can track incidents against pre-prepared work plans and support the following Day of Operations processes:

- ROC 2 – Monitor and Manage Normal Operations
- ROC 3 – Detect and Assess Abnormal Event

  Service Disruption

  D0 – Tolerable – Divergence from timetable within acceptable levels
  D1 – Minor – Divergence from timetable exceeding threshold but tolerable
  D2 – Significant – Significant disruption affecting multiple trains (20 mins)
  D3 – Major – Affecting wide area, multiple trains, prolonged periods (1+ hours)
- ROC 4 – Manage Incident
- ROC 5 – Manage Service Disruption.

REM System Impact

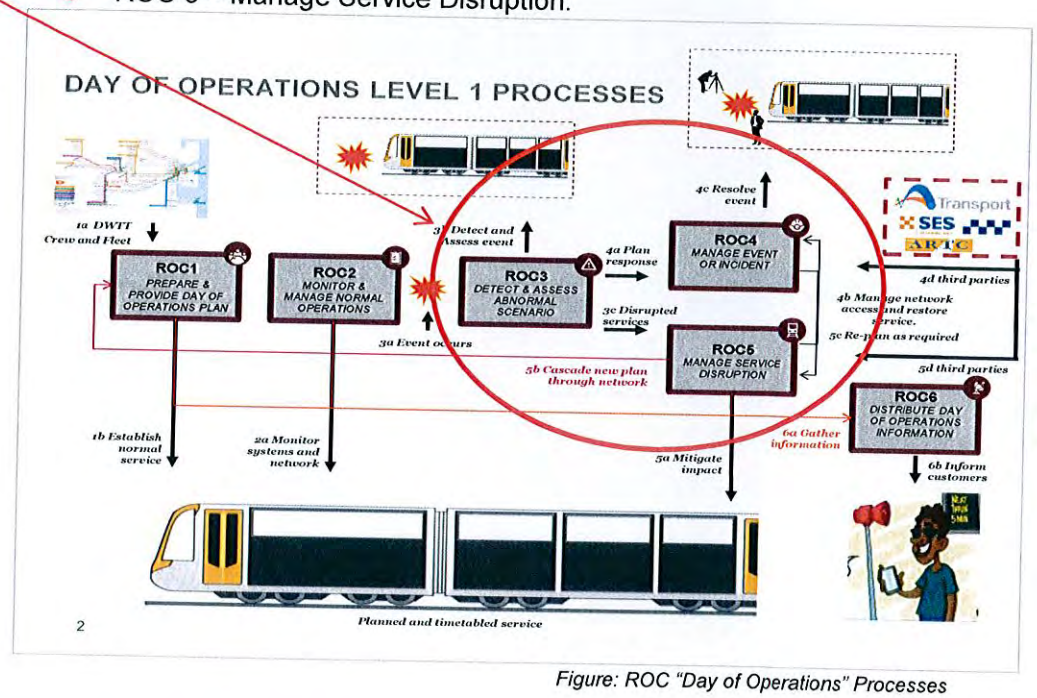


Figure: ROC "Day of Operations" Processes

ROC Level 1 Process Framework

ROC1 – Prepare and Provide the Day of Operations Plan

This process is the preparation of the Daily Working Timetable (DWTT), which includes planned possessions for scheduled maintenance activities and all other associated resource plans (e.g. Crew roster, Fleet Roster) that come together to provide the Day of Operations plans. These will detail the expected services that will be provided to customers and the key operational activities required to support them.

ROC2 – Monitor and Manage Normal Operations (Release 1 – Business)

This process describes the routine and normal activities that occur during Day of Operations, in order to monitor and manage normal operations. These actions do not amend the plan but facilitate and support it.

ROC3 – Detect and Assess Abnormal Event (Release 1 – REM)

This process involves an initial detection and assessment of the impact of an event during the Day of Operations by either automated condition monitoring infrastructure or manually by Sydney Trains staff. In each instance of these events will result in the generation of an incident notification within the REM IMS upon which is processed by an Incident Co-ordinator role who also has the ability to manually create incident records. The Incident Coordinator's role is to confirm and classify the notifications to create an incident or append to a related incident and activate the management of the incident.

ROC4 – Manage Incident (Release 1 – REM)

This process focuses on the managing of an incident includes all the activities that are required to resolve the cause. This includes the initial identification of response activities and the activation of the response plan, the mobilisation of work teams, the tracking of progress, the management of an audit log of what has occurred and the resolution of the fault or situation. Where incidents involves multiple response teams e.g. infrastructure access or isolation of a core operational asset (e.g. rolling stock, overhead wire), REM proves a collaborative communicative environment for all relevant personnel within a single source in real-time.

ROC5 – Manage Service Disruption (Release 1 – REM)

This process focuses on the management of service disruption is a key network control function. It is generally dictated by a number of key planning decisions made by train controllers regarding the affected services and how they can be amended in response. The train controller's planning decisions are actioned by a number of key operational and front-line staff around the network. Train controllers will continue to monitor the effectiveness of their decisions, making amendments where required during the ongoing period of the incident and the post incident recovery.

ROC6 – Distribute Day of Ops Information (Release 1 – Aligned with Strategic)

This process focuses on the distribution of Day of Operations information to customers involves both the internal communication of Day of Operations information to customer facing staff, the direct provision of Day of Operations information via directly owned channels, and the publication of Day of Operations information to third parties who inform customers via their channels.

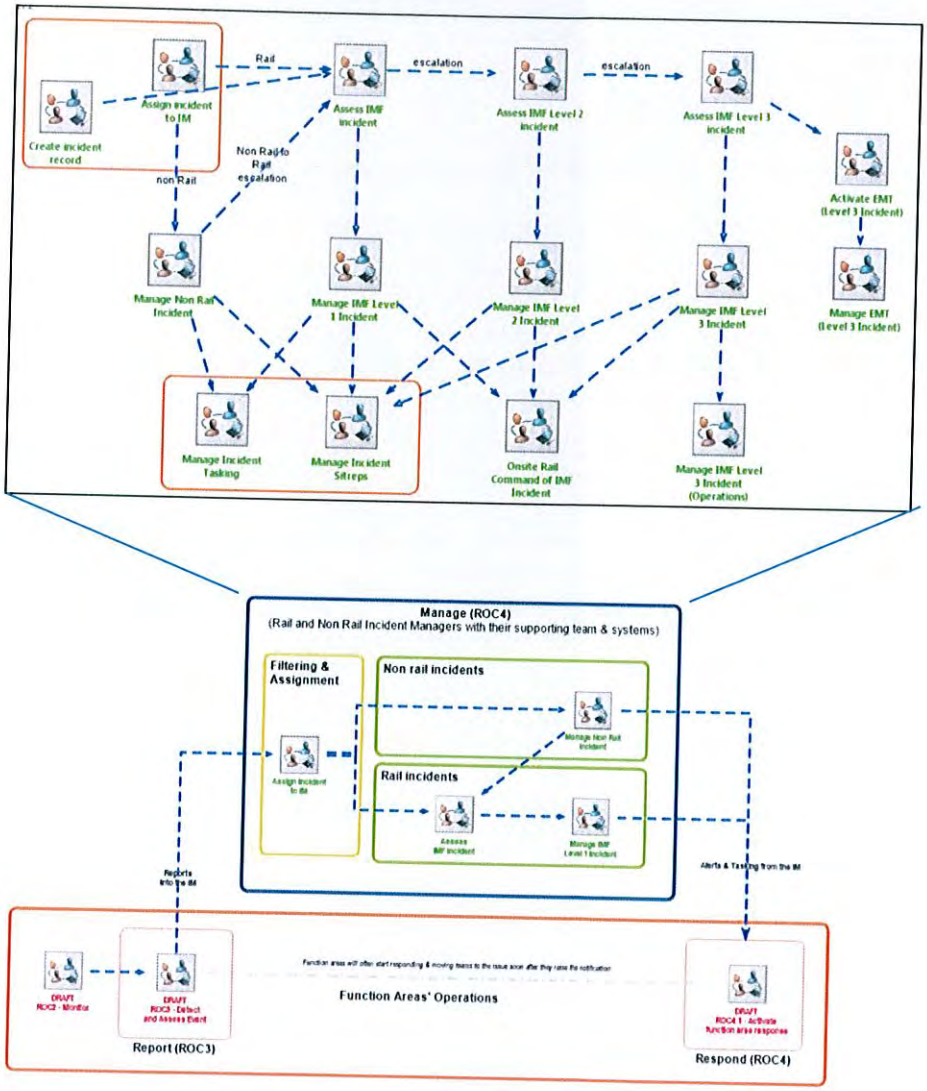
2.6 Incident Management Framework

This Incident Management Framework provides the overall guidelines and procedures for Sydney Train's response to incidents occurring on Sydney Trains and NSW Trains network.

It outlines what incidents can potentially occur and describes the organisational principles of Sydney Train's response to incidents.

It differentiates the management structures for three incident severity levels.

The framework includes references to legislation and regulatory requirements and links Sydney Train's incident response documentation to other Rail Agencies' plans and procedures, as well as to other internal documents.



2.7 Business Services

The business services that are involved or supported by the solution are:

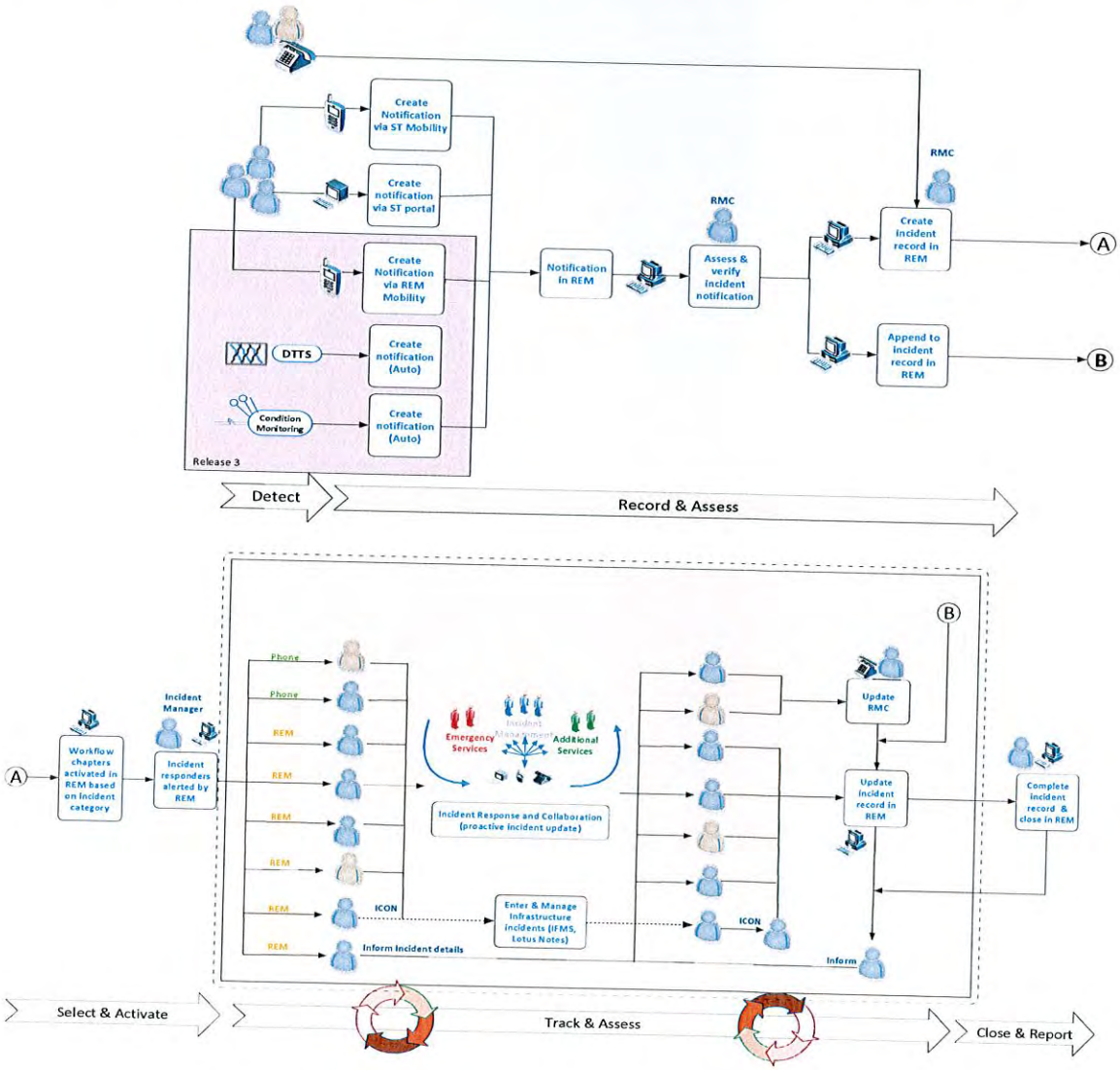
Business Service	Description
Detect	Detecting and capturing notifications that could result in an incident or be appended to an existing incident
Record & Assess	Creating incidents, linking related incidents and assisting in providing or pre-populating supporting information related to the incident
Select & Activate	Assign incidents to response personnel, distribute response plans and provide workflows
Track & Escalate	Provide visualisation to assist in an incident. Tracking, escalating

	and monitoring till completion.
Close & Report	Manage incident closure, provide reporting and exporting incident information to downstream systems
Other Capabilities	Enable organisational resource management to support in resolution of incidents Enable data management and integrate with ROC and downstream systems.

2.1 Business Capability to Solution Mapping

The Use cases and Actors are documented in the Detailed Technical Business Requirements.

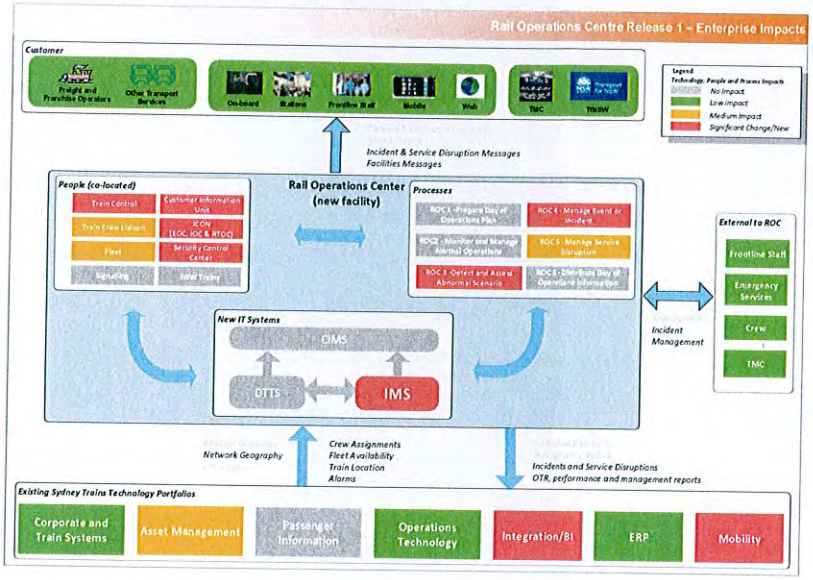
The business capabilities to the application and interfaces mapping will be specified in a separate XLS document.



3 Solution Architecture

3.1 Enterprise Impact

The enterprise impacts relevant to the key 'Day of Operations' impacted by ROC program Release 1 are shown below.
Refer to ROC Technology Architecture Blueprint for Enterprise impacts relevant to the key "Day of Operations" impacted by the ROC program.

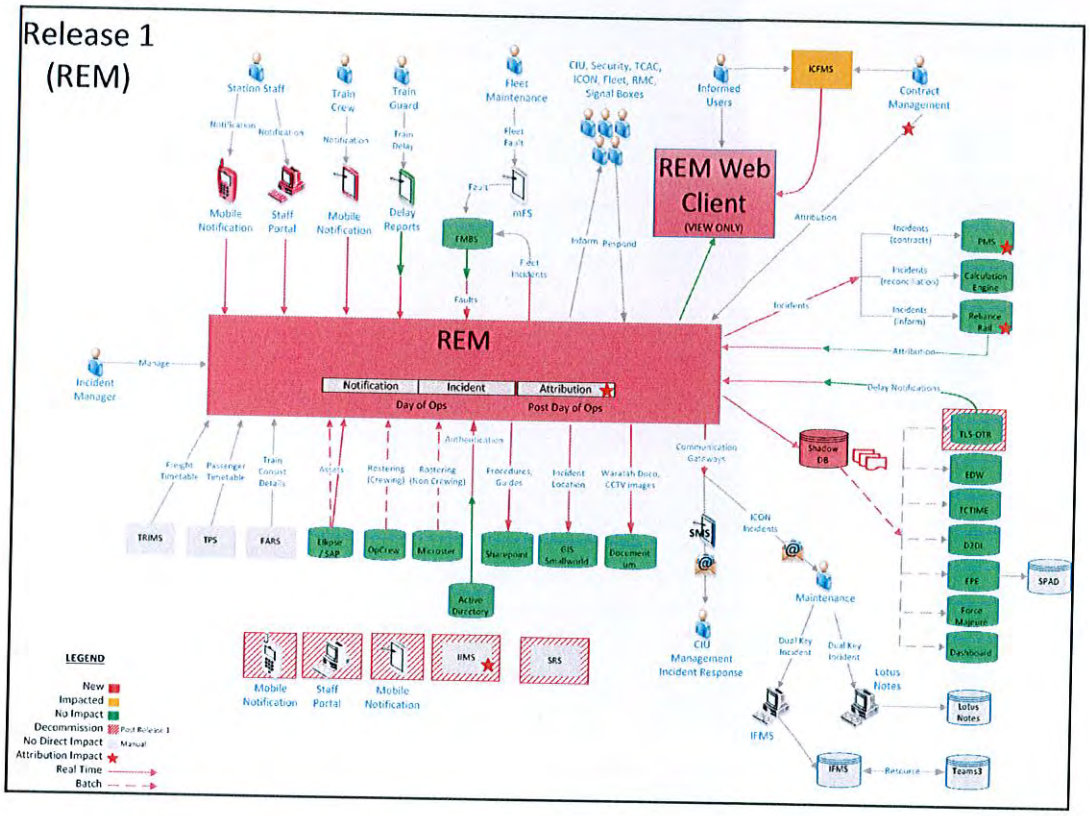


3.2 Solution Release Overview

The solution Overview by Releases are:

Release 1	Release 3
- REM COTS Product - Sydney Trains Configuration - Outbound SMS ONLY - Email - Sydney Trains Mobile Notification - Sydney Trains Web Browser Notification - Unstructured Person Of Interest data - Shadow Database mirroring - Dual Keying IFMS, Lotus Notes	- REM iOS Mobile (collaboration) - REM iOS Mobile (notifications) - 2 ways SMS - Structured Person Of Interest data - DTTS Integration - CIMS Integration - VCS Integration (if compatible) - Automated condition monitoring notification

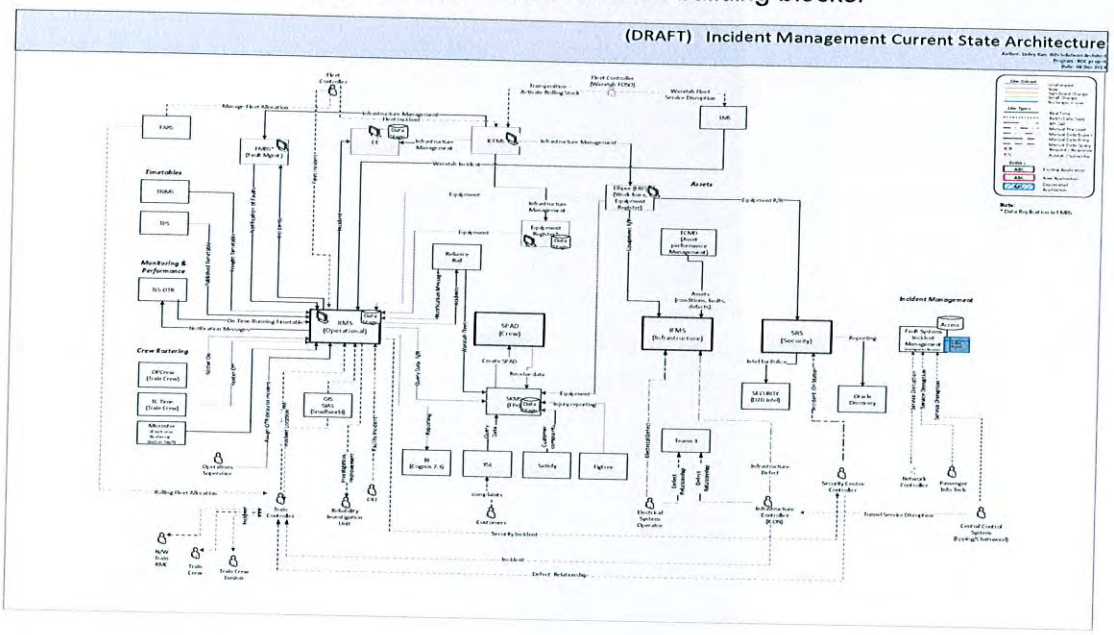
3.3 Solution Overview



3.4 Target Architectures

3.4.1 Current state

The diagram below outlines the current state solution building blocks.

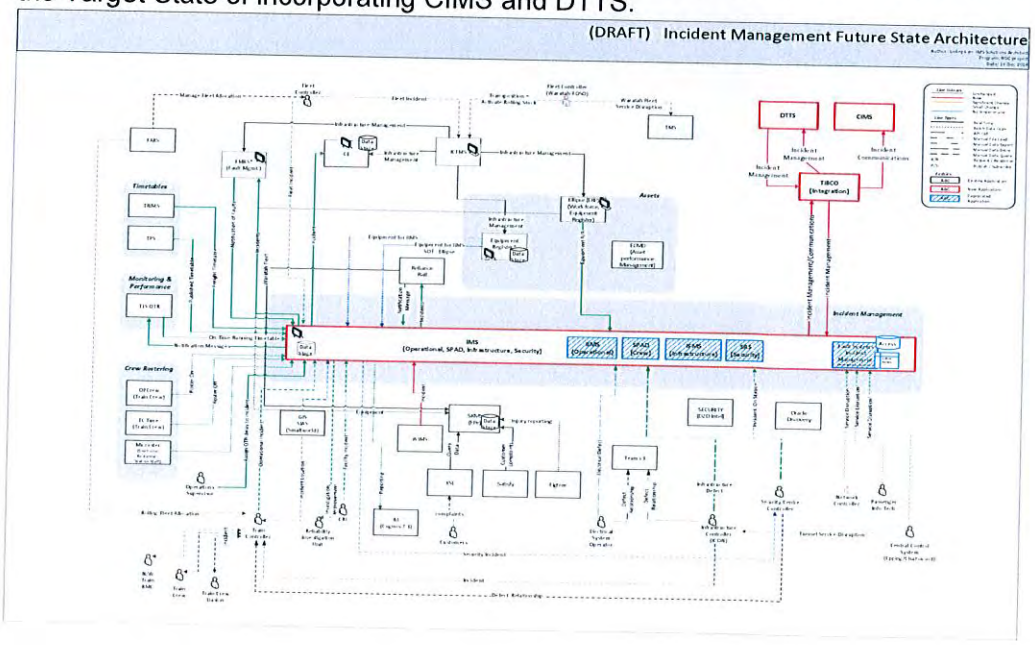


3.4.2 Transitional state

Release 1 Transitional State diagram – see Solution Overview section above.

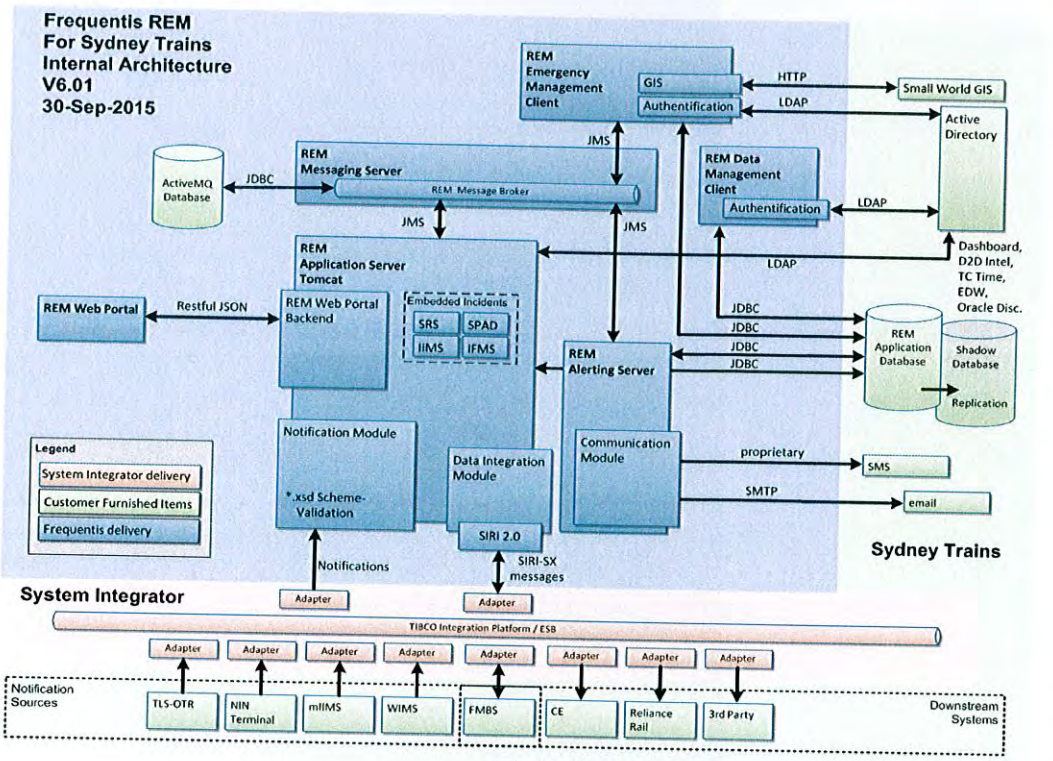
3.4.3 Target state

The diagram below outlines the target state solution building blocks for Release 1 with a view into the Target State of incorporating CIMS and DTTS.



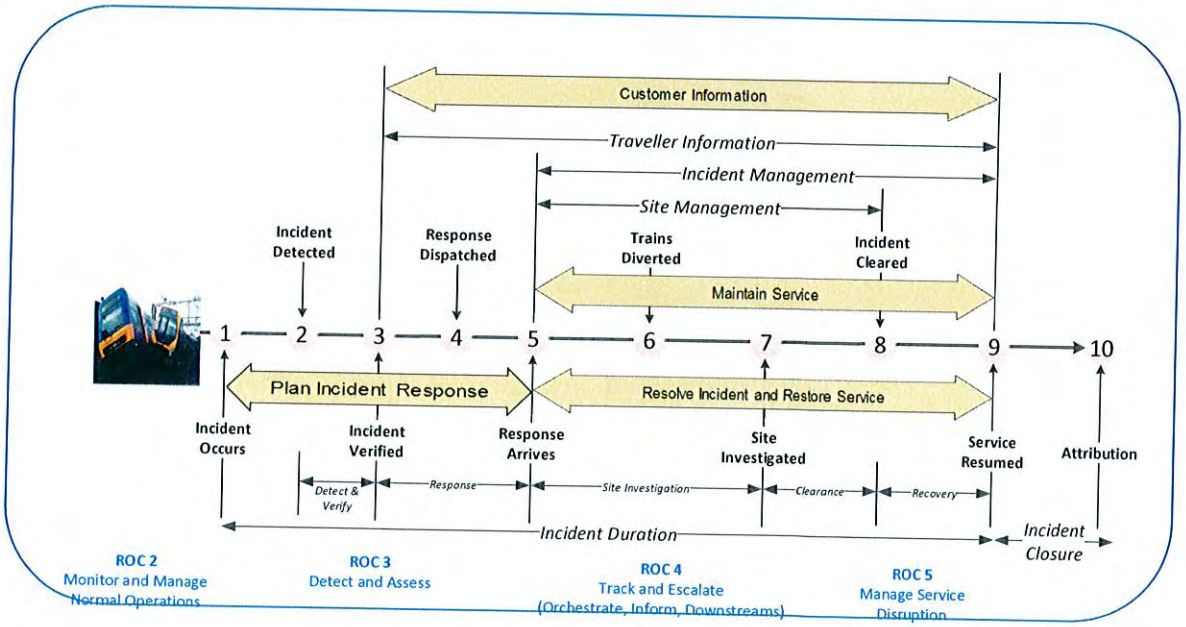
3.5 Key focus areas of the Release 1 Solution

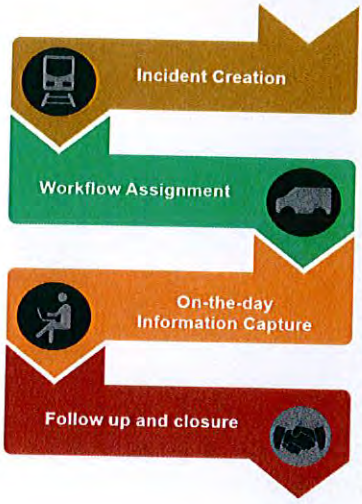
The high level solution overview and key features relevant to the ROC program Release 1 are detailed as follows below.



3.5.1 Incident management Life Cycle

The diagram below represents stages in the lifecycle of an Incident and the ROC phases.





ROC 3 Detect and Assess Abnormal Event.
Incident Creation with minimal information needs (Typically 'level one' / 'level two' coding).

ROC 4 Manage Incident.
Incident Information needs to be sufficient to activate workflow and response in a timely manner.

ROC 4 Manage Incident
As the incident is being managed, information is being progressively captured and entered into REM by Incident Responders / Managers. When the incident has been resolved, the final 'on-the-day' chapter requires the incident details to be updated (including the 'initial delay' duration) to be ready for 'rules-based' initial attribution.

Post Incident Activity
REM automatically activates the attribution process with a 'auto-initial attribution'. The Incident status through the review process can be reflected in post incident REM chapters. Final attribution determination signals the final closure in REM (usually 48-72 hours) .

The incident lifecycle stages available from REM COTS product are:

Incident Status	Description
Initial Report	incident creation
In Progress	incident in progress
Closed	incident resolved and services resumed Note: consequential delays attached to incident ceases when Incident is closed
Cancelled	Used for duplicates or incidents raised in error.
Correcting mode	Used when making amendments post closure (i.e. could be used to re-open or undertake attribution processing).

3.5.2 Incident Coding

REM Release 1 is transforming the business by developing "to be" processes and workflows upon which 'responsibility' configuration tables are defined within the NEW Incident Management System.

The current incident types and cause codes from the legacy IMS systems (IIMS, IFMS, SRS, SPAD) are being reviewed and a NEW single source incident categorisation and cause code structure will be defined within REM.

There are no Industry standard incident category standards and Sydney Trains is defining its own **incident categories** that meets the organisation's needs.
However, there are industry standards cause codes which is being adopted by Sydney Trains – UIC **delay codes 450-2**.

The NEW Incident Coding data may potentially have functional and reporting service implications with interfacing systems. An architectural guiding principle for the ROC program is "No changes to legacy systems" and TIBCO is to manage and transform the ROC interfaces with the legacy systems. There is opportunities for the business to evolve the

legacy systems to accept the NEW incident coding data and this will need technical data and software analysis to be undertaken to assess impacts with direct and indirect interfacing systems.

Incident coding impacts from the incident initiation to attribution to reporting will depend on business appetite and risk factor for change.

High Level Solution Options are:

Options	REM	Translation	Interfacing Systems	Translation	Reporting
1	New	Y	Legacy	N	Legacy
2	New	Y	Legacy	Y	Hybrid
3	New	N	New	Y	New

3.5.3 Incident Categorisation

Incident Categories **drive incident workflow management (incident checklist** – listing subdivided into chapters showing possible actions steps). The activities required for a certain type of incident are defined as **single tasks that are assigned to chapters within a checklist**. The checklist for a different type of incident might partly require the same tasks or require additional ones. Additional tasks can be assigned to existing or additional chapters. **Personnel are responsible for performing single tasks.**

Collaboration enables several users to **work simultaneously on the same incident** and indicate changes to the other editing users.

4 levels of **Incident Categories** are available in REM to assist in driving workflows.

- Level 1 – 1000000
- Level 2 – 1010000
- Level 3 – 1010100
- Level 4 – 1010101

Candidate Incident Categorisation for REM

Level 1	Operations Planning & Management	Infrastructure	Planned & Unplanned Works	Other Infrastructure Managers	Operational Irregularity	Train & Train Crew	Freight & Other Passenger Operators	Public, Security and External	Consequential Delays	Major Incidents
Level 2	Timetable Defects	Signalling & Control Systems	Possession	ARTC	Train Crew Late Departure	No OK Stock for Trip	Freight Train Presents Late	Offence Against Person	Track Occupation due to Same Train Lateness	Derailment
	Roster Defects	Level Crossing	Possession Irregularity / Overrun	Country Rail Network	Excessive Station Dwell	Rolling Stock Defective in Service	Freight Train Defective in Service	Offence Against Property	Track Occupation due to Other Train Lateness	Collision
	Incorrect Route Given	Communication Systems	Speed Restriction		Requested Train Stop or Hold	Rolling Stock Presentation	Freight Working Irregularity	Anti Social Behaviour	Late Turnaround	Explosion
	Incorrect Priority Given	Power Supply Equipment			Unplanned Special Event / Excessive Crowds	Train Crew [illegible] POD	Private Operator Train Presents Late	Suicide, Accident, Illness	Awaiting or Missed Booked Connection	Severe Incidents (RIF4?)
		Track			Station understaffed / staff	[illegible] Error	Private Operator Train Defective in Service	Trespass		
		Corridor			[illegible]	Missed Stop / Overrun	Private Operator Working Irregularity	Animals / Pets		
		Structures				SPAD / Near Miss		Fire		
		Earthworks						Weather		
		Pumps & Drains						Gas / Water / Sewage / Chemical Leak		
		Lifts & Escalators						Industrial Action		
		Buildings & Facilities								
		Ticketing & Gates								
		Depot								

3.5.4 Coding Table (UIC 450-2 Delay Codes)

UIC 450-2 is a standard that enables the assessment of the performance of the network related to rail traffic operations for the purpose of quality analyses – delay coding and delay cause attribution process.

In order to establish and improve high level punctuality in international traffic it is necessary to measure punctuality of trains and to identify the causes for delays and cancelled services in a common way. The delay code table provides a basic overview on the causes which influences train performance.

	Infrastructure Manager				Railway undertaking				
	Operational/ planning Management	Infrastructure installations	Civil engineering causes	Causes of other IM	Commercial causes	Rolling stock	Causes of other RU	External causes	Secondary causes
	1 -	2 -	3 -		5 -	6 -		8 -	9 -
- 0	Timetable compilation	Signalling installations	Planned construction work	Delay caused by next IM	Exceeding the stop time	Roster planning/ re-rostering	Delay caused by next RU	Strike	Dangerous incidents, accidents and hazards
- 1	Formation of train by Infrastructure Manager	Signalling installations at level crossings	Irregularities in execution of construction work	Delay caused by previous IM	Request of the RU	Formation of train by Railway Undertaking	Delay causes by previous RU	Administrative formalities	Track occupation caused by the lateness of the same train
- 2	Mistakes in operational procedures	Telecommunication installations	Speed restriction due to defective track		Loading operations	Problems affecting coaches (passenger transport)		Outside influence	Track occupation caused by the lateness of another train
- 3	Wrong application of priority rules	Power supply equipment			Loading irregularities	Problems affecting wagons (freight transport)		Effects of weather and natural causes	Turn round
- 4		Track			Commercial preparation of train	Problems affecting power cars, locomotives and railcars		Delay caused by external reasons on the next netword	Connection
- 5		Structures							Further investigation needed
- 6									
- 7									
- 8	Staff	Staff			Staff	Staff			
- 9	Other causes	Other causes	Other causes		Other causes	Other reasons		Other causes	

The coding table distinguishes between primary causes and secondary causes
Each primary cause is allocated to a responsible body, which can be the Infrastructure Manager, Railway Undertaking or an external influence.

Primary causes are describing the original event which led to a delay.
Secondary causes are describing the consequences of an already existing delay – either the same train which is further delayed or of another train.

3.5.5 Operational Reporting

Incident occurrence is unavoidable in the complex networks of Sydney Trains. The ROC vision to be a world-class, customer-focused operator of rail network and deliver quick, frequent and reliable services, has provided the opportunity for better management of these incidents a priority for Sydney Trains.

The current reporting landscape has evolved into a complex technology environment with a multitude of disparate "sources of truth" data repositories servicing the individual business unit's needs.

The business has evolved, but it is currently constrained by the type of legacy IMS data available. The REM data model is very rich in comparisons to the legacy Incident Management Systems, thus providing the opportunity to the business to generate incident related reports that meets the current and future business reporting needs.

The Release 1 Reporting Working Group's held a customer central session with key stakeholders and identified 165+ incident related reports. Based upon the Classification table below, approximately 30% of reports are classified as mandatory Category A that would potentially be affected and need some adaption / re-explanation for external consumers.

		Explanation
(A) Serves External Requirement The report is produced directly for external stakeholder consumption.		This report cannot be changed without consultation so the report is essential in the near term (e.g. RSC).
(B) Serves Essential Internal Requirement The report is produced for internal consumption in direct alignment to an essential external stakeholder report(s).		These reports are required for Sydney Trains' internal focus on their customers/ stakeholders. The reports can be adapted but the requirement served is essential (e.g. Level One & Two Scorecards).
(C) Serves Flexible Internal Requirement The report indirectly supports the outputs contained in external stakeholder reports.		The report is used to track and manage performance internally. Changing the reports is at the discretion of the business unit(s) creating and consuming the report.
(D) Serves no External Stakeholder Requirement The report does appear to map to any external stakeholder reporting need.		Reports are focused on internal process. Reports may be able to be consolidated, simplified or dispensed with.

Reporting classifications

The ROC program must ensure existing business reporting is not impeded and ensure business reporting continuity for regulatory reporting.

The ROC program also has an opportunity to simplify the reporting landscape with the support of the business to:

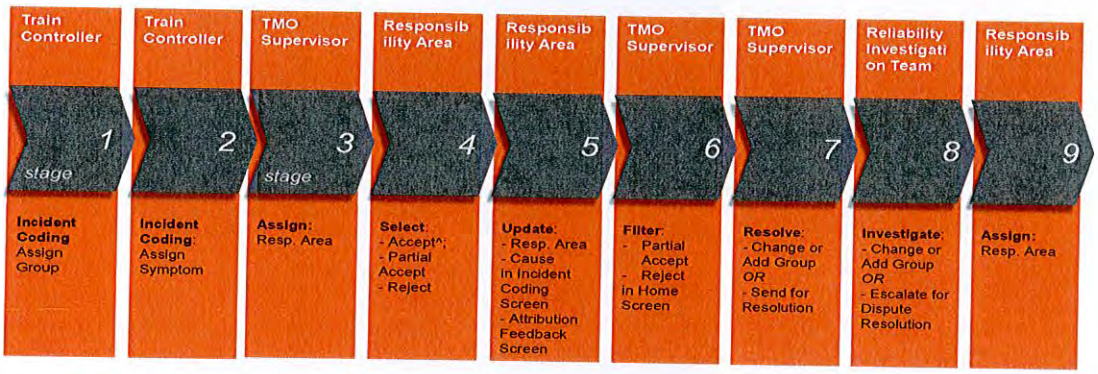
- Assess the legacy reporting with purposes of managing performance & planning
- Assess operating efficiencies in streamlining and automating report production
- Assessing the need for the existing reports with opportunity in ceasing redundant/obsolete reports
- Reducing the complex technology reporting landscape
- Implement new performance management reports and links to targets that drive business improvement and provides a common currency of measurement enabling comparisons to be made and improvements to be prioritised
- Leverage Sydney Trains Reporting tool capabilities enabling the users to "undertake self-service reporting" needs that could be presented in a format to suit a medium of devices e.g. dashboard on tablet

The REM product has a clear focus in a "fit for purpose" incident management systems and deem reporting unique to each organisation and its needs, therefore the REM product offers 8 basic reports.
The Release 1 REM solution provides a Shadow data base which mirrors the production DB to provide an operational data store or report server. This provides Sydney Trains with the opportunity to perform data analytics without impacting the system performance of the REM COTS product suite. The REM shadow database can be implemented as a read only database to ensure the integrity of the data.

3.5.6 Attribution

The Rail Services Contract requires Sydney Trains to work with TfNSW and NSW Trains to establish an effective and transparent incident attribution process that considers governance arrangements, escalation processes, systems investment requirements and commercial arrangements (if any).

The current Incident Attribution process involves using the "Incident Attribution Rules, Guidelines and Processes" framework to review incident data, assigning ownership for incidents to the relevant Directorate/Business Unit, facilitating feedback on this ownership, undertaking additional investigation if required, and making any necessary corrections to enables the identification of performance issues and facilitates continuous improvement.
It also enables measurement to reflect the perceived loss to the customer (e.g. 'Journey Time) and provides a common currency of loss enabling comparisons to be made and improvements to be prioritised.
It support investment ($ and resource) decision making to assist in targeting the areas which will deliver the greatest return in terms of customer-impact improvement.
It also provides the mechanism whereby performance of the private sector party is formally assessed and links to payment incentives.



The current attribution outcomes are:

- subjective interpretations on a case by case basis by the relevant stakeholders
- stakeholders roles and responsibilities at each stage of the attribution process are not clearly defined and they may not have the same understanding of the procedures and responsibilities for actions within and across divisional boundaries
- The current attribution coding is a complex matrix of **responsibility areas, event types and cause codes.**

The ROC program is transforming the business by developing "to be" incident processes and workflows upon which 'responsibility' configuration tables are defined within the NEW Incident Management System.
In doing so, the ROC program has an opportunity to specifically assess the adequacy and effectiveness of controls in relation to the incident coding and attribution processes and implement the building blocks to drive operational management of risk and inefficiencies:

- System and processes in place over incident attribution and initial root cause analysis.
- Integrity and security of information captured.
- Targets and KPI's established are appropriate for incident attribution to identify areas for performance improvement that assist Sydney Trains to meet public transport reliability targets.

- Operational efficiencies by initiating a default attribution process derived when an incident has obtain sufficient incident information to evolve the attribution root cause during the incident lifecycle to final closure of the incident from the algorithm of variables with weighting factors based upon factual incident data.
- The REM system has a rich data model that enables the organisation to evolve the current attribution process into a semi-automated attribution process supported by key data values for variable based algorithm to be derived and measurable operational costs.
- The current attribution process captured in legacy IIMS (Operational IMS) is a mixture of operational and maintenance attribution outcomes. The business has the opportunity in capturing attribution outcomes from an operational (service) and maintenance (asset) level. This can be achieved with the two programs (ROC &EAM) having a clear attribution delineation and sharing an association identifier (e.g. ROC-incident # M:M EAM-fault#). Partner contracts can be focused on quality of service or assets.

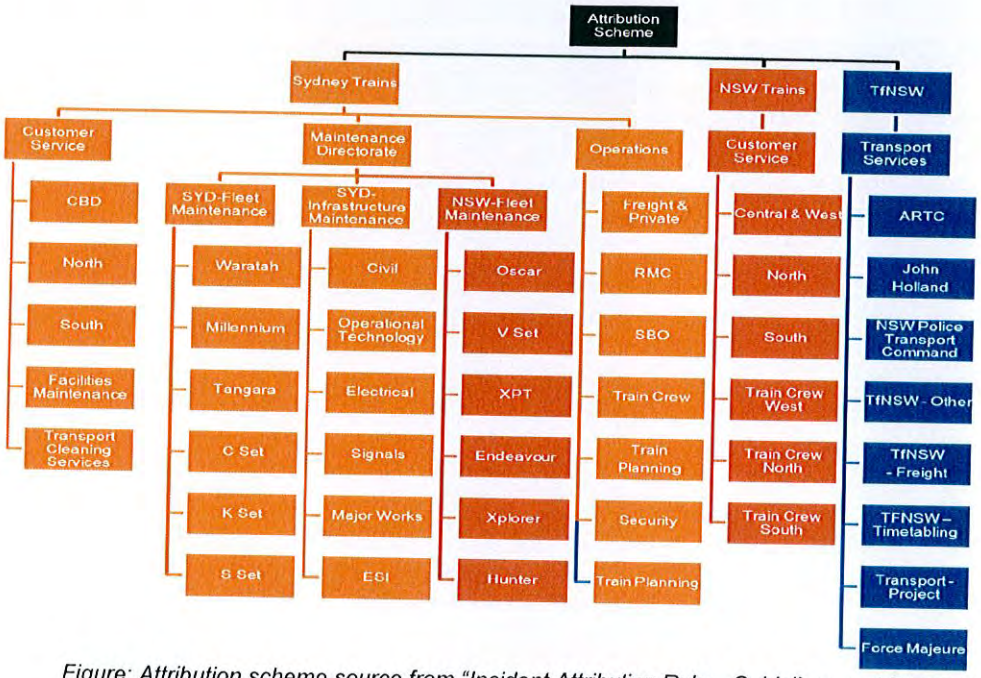
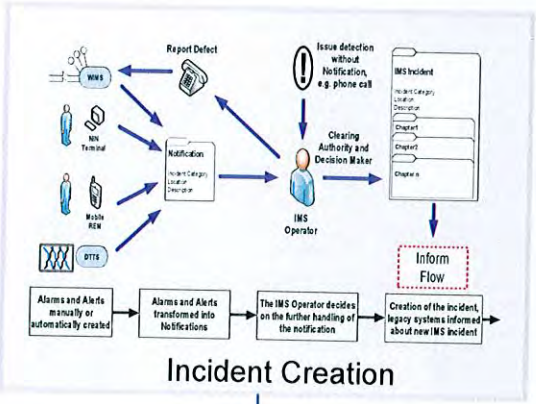


Figure: Attribution scheme source from "Incident Attribution Rules, Guidelines and Processes"

3.5.7 Solution flow

The following visuals illustrates solution flow involved for IMS incident handling.

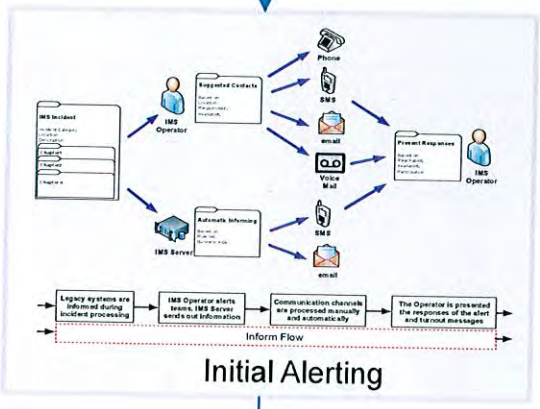


RMC can be notified of an event via many channels (phone, verbal, electronic) upon which they can manually create an IMS incident based upon the incident category or append information to an existing incident. Incident creation triggers workflows.

During the incident lifecycle information is transmitted with Sydney Trains back office systems for incident informing and insights.

Release 1 Notification channels
- Condition Monitoring Notifications, automatically transmitted from Condition monitoring systems
- Network Information Notice (NIN) Notifications, raised manually from desktops

Release 3 Notification channels
- REM Mobile Notifications, raised manually from mobile field devices
- DTTS Notifications, raised automatically from the DTTS system



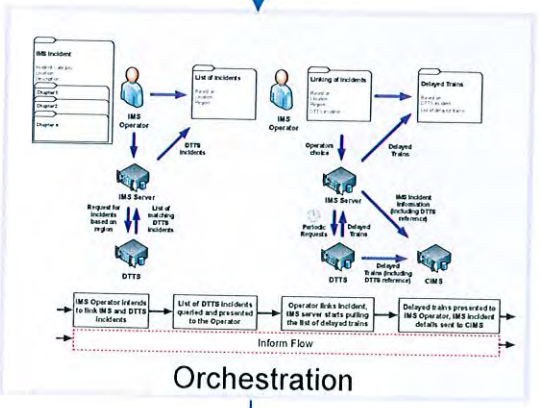
After the creation of an incident, the workflow activates the collaboration to responsible personnel to resolve the incident.

The IMS system provides methods for automatic alerting which enhances the speed of incident handling, and also removes duties from the incident operator thus reducing the stress and workload to let them focus on the important tasks during the critical stages of the incident.

IMS/REM supports multiple communication channels e.g. SMS, Email, Voice Mail, Integrated Telephone Dispatch systems

Release 1 Communication channels
- SMS Outbound, Email

Release 3 Communication channels
- SMS 2 way (Inbound, Outbound), Voice Mail, Email, Integrated Dispatch System



The incident category initiates workflows which enables the collaboration of incidents as well as simultaneous conflict resolution which enables users to update the incidents in real time.

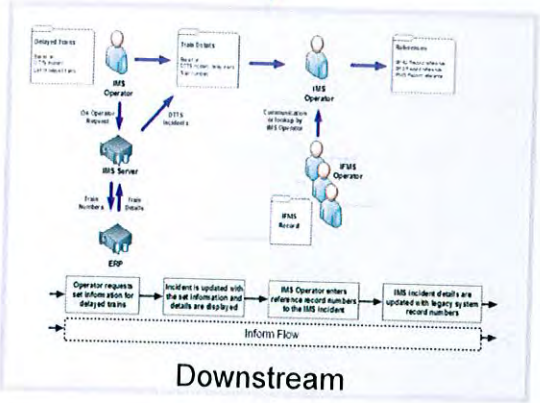
For Train delay incidents, the Incident operator can link the DTTS possession (initial train delay) to the incident. Once the link has been established, the IMS server polls for updates regarding delayed trains. All consequential train delays are appended regularly to the IMS incident until incident closure.

In parallel the IMS Server will send updates of the IMS incident throughout the handling to the Customer Information Management System (CIMS) and downstream legacy systems. The incident updates allows the CIMS to react to available information and inform the customers about the reason and expected delay as early as possible.

Release 1 Train delay information
- manual integration with TLS, TRIMS

Release 3 Train delay information
- automated integration with DTTS, CIMS

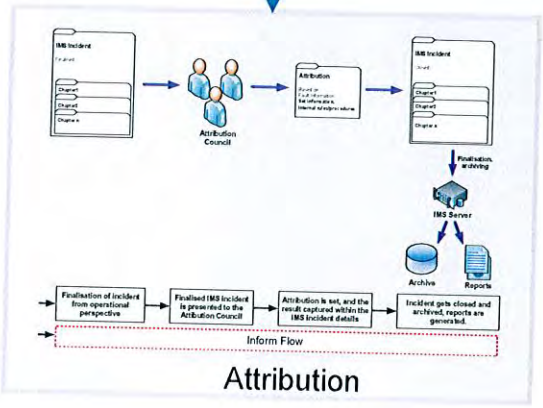
A



Downstream

Once the list of delayed trains is available after the linking of the IMS Incident and the DTTS possession, the train details are made available thru an interface with Ellipse (ERP) to source set configuration, to support incident management e.g. dangerous goods information, passage capacity, manufacturer and composition of the set.

SIRI messages are passed thru the TIBCO middleware layer delivering incident information to downstream systems

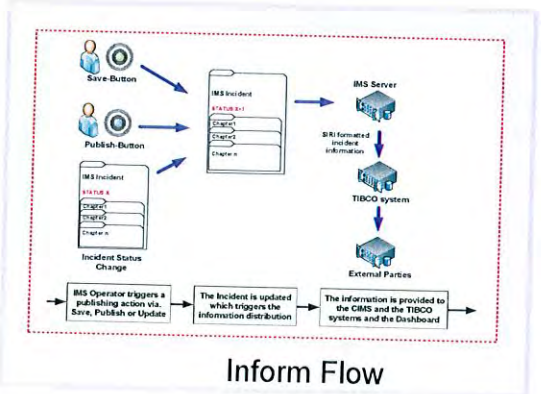


Attribution

Once the incident has been resolved, all required incident fields must be documented.
Finalising the IMS incident will also stop the background task of querying the DTTS system for updates regarding delayed trains, as it is assumed that at this point in time no further train delays are expected anymore from the DTTS system regarding this particular incident.

In this state, the incident is ready for the attribution phase. Once attribution has come to a conclusion, the incident will be updated, closed and archived.

Closure of the incident will also stop the background task of continuous distribution of information to downstream systems, as no further updates regarding this incident are expected and all information has already been continuously distributed throughout the entire incident handling process.



Inform Flow

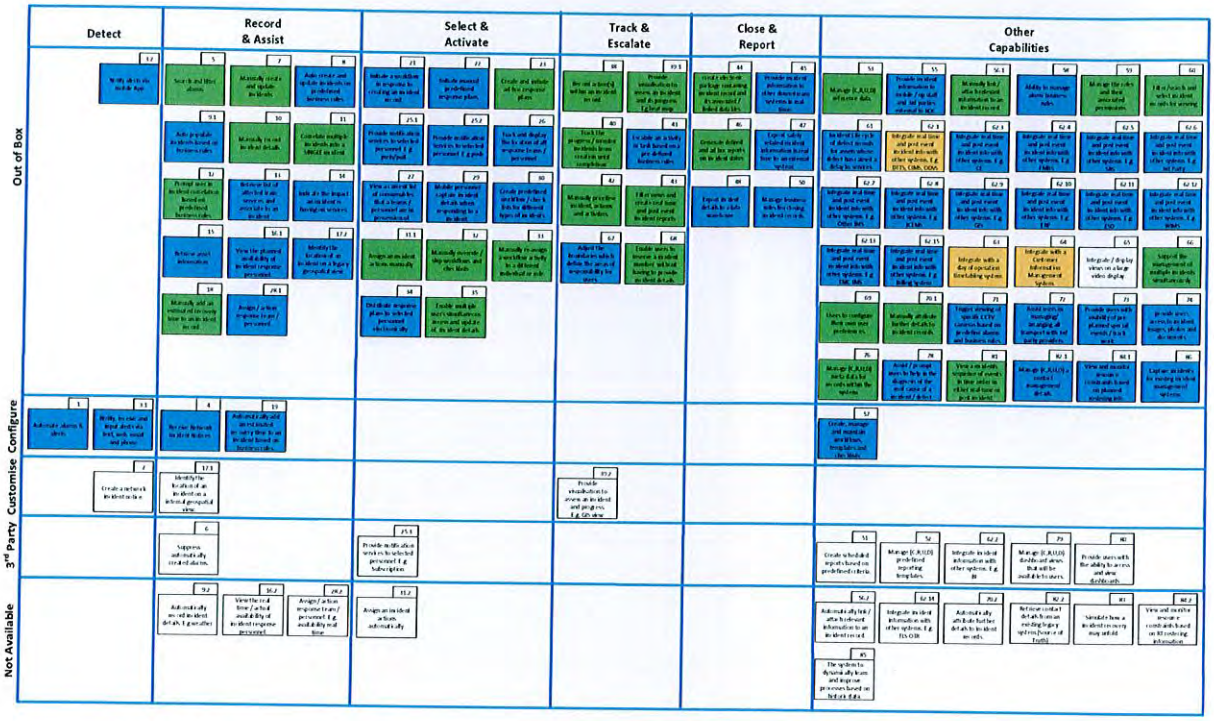
Informing is the process which is executed in the background of the IMS system starts with and initial downstream of information at the time of incident creation and ends with the closure of the Incident.

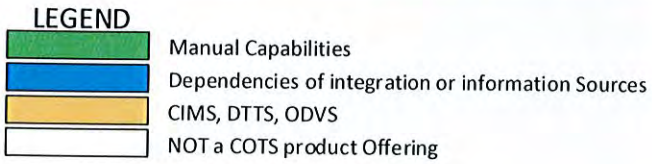
Updates are triggered automatically and manually. The IMS business logic is configurable to trigger information distribution to selected consumers based upon incident status changes.

The information itself is distributed via SIRI messages from the IMS Server to the TIBCO middleware integration layer that will then transform the SIRI formatted messages into proprietary messages, suitable for the legacy systems.

3.5.8 System Capabilities

The heat map of system capabilities supported by the IMS product for the business services are shown below:





The REM COTS product is:

- **Fit for purpose** - the solution addresses 80% of the required capabilities
- **Extensible** - the technology solution is able to address an appropriate degree of change or modification to support altering business requirements without requiring substantial redesign or implementation
- **Scalable** - the solution is able to address predictable or normal business changes within a moderate time frame which will enable growth with Sydney Trains and not be inhibited by inappropriate configured or designed solutions
- **Maximise positive impact on customers** - ensuring positive impact on customers and staff thru collaborative, accurate and informed communication
- **Flexible** - application is extendable using vendor-supported configuration options that preserve the future upgradeability of the application
- **Application ease of use** – the product is developed with a view to reducing complexity for end-users thru icons and tabs

3.5.9 Platform Functional Overview

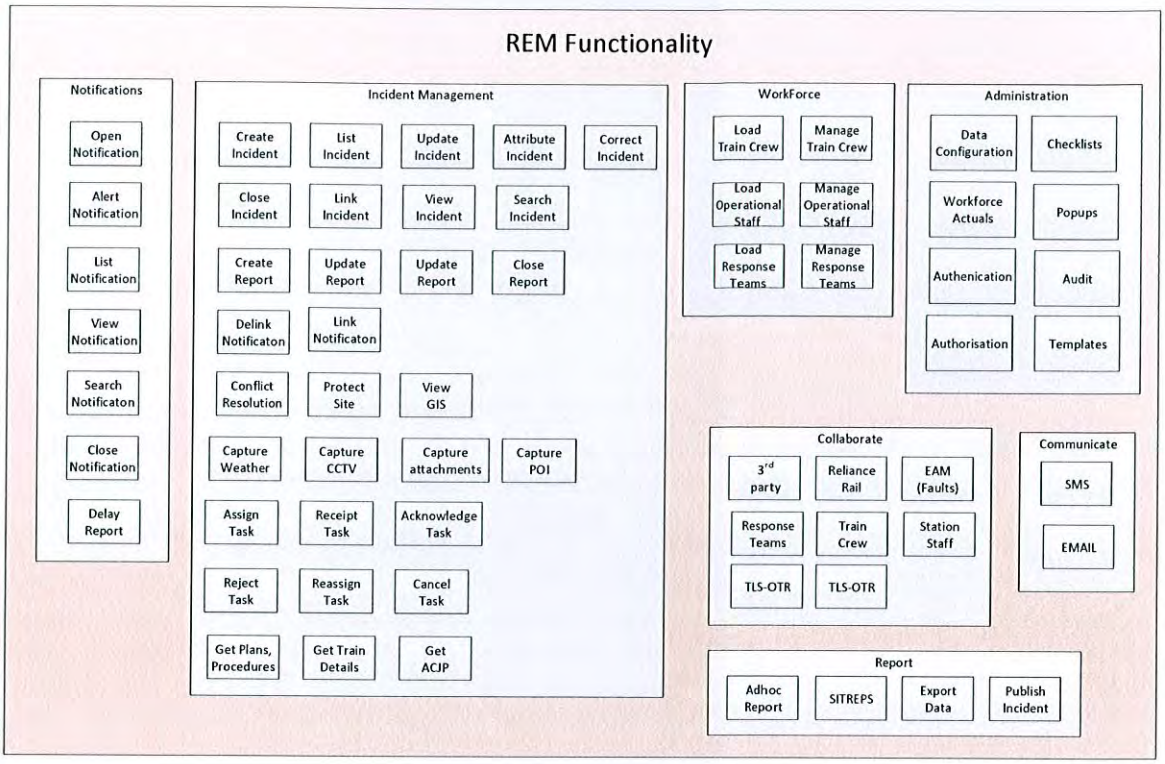
The table below represents the functions that are available to the users via a User Interface.

Platform		Mobile (iOS)			Web Browser (IE/Chrome)		Desktop
	Channel	Sydney Trains Mobile	Sydney Trains Tablet	REM Mobile (R3)	Sydney Trains Staff Portal	REM Web Portal	REM EMC
Function	Create Notification	✓	✓	✓	✓		
	List/View Notification						✓
	Management Notification						✓
	Create Incident						✓
	List/View Incident Details			✓		✓	✓
	Manage Incidents			✓			✓
	Inform/Alert			✓			✓
	Manage Tasks			✓			✓
	View Audit Logs					✓	
	Manage Rosters					✓	
	Reporting						✓
	Attribution						✓

✓ Functions support by applications for Release 1.

Note: REM Mobile (R3) has been provided as a FYI

3.5.10 REM Application Functionality



3.5.11 SIRI - Electronic Information Exchange

Background

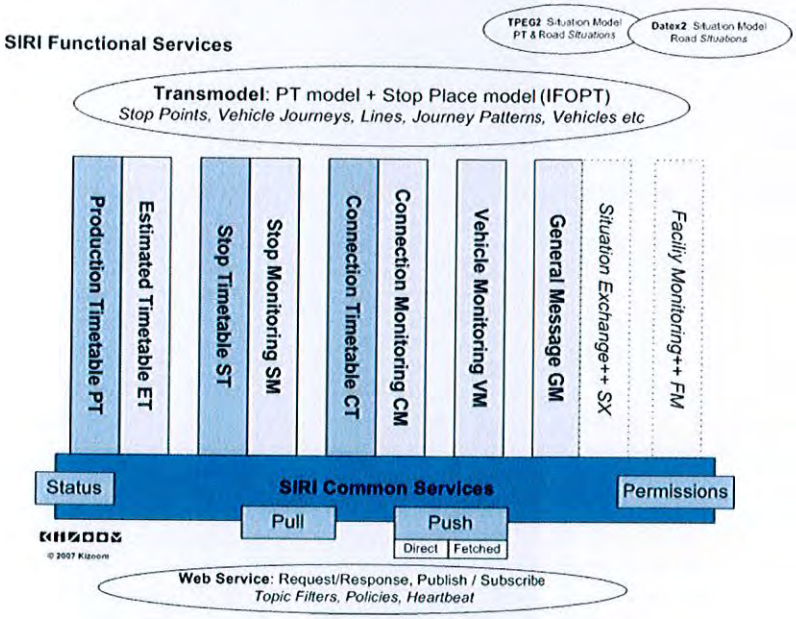
Transmodel is the European Reference Data Model framework for information systems within the public transport industry.
It is underpinned by a number of CEN (Comité Européen de Normalisation) data standards such as **CEN SIRI, CEN NeTEx** and a set of national standards for data abstractions allowing for harmonization and interoperability.

SIRI (Service Interface for Real Time Information) specifies a data interface standard for exchanging information about the planned, current or projected performance of real-time public transport operations.
SIRI comprises of a modular set of discrete functional services for exchanging data for public transport information systems. Services cover planned and real time timetable exchange; vehicle activity at stops; vehicle movement; and information to assist in the provision of reliable connections between vehicles. Services may be implemented and used individually.
SIRI aims to incorporate of the best of various national and proprietary standards from across Europe and deliver these as web services using a modern XML schema.

All SIRI services are provided over a standardised Communications layer, based on a Web Services Architecture.

- The Communications layer upholds a consistent approach for all the functional services to Security, Authentication, Version Negotiation, Recovery/Restart, and Access Control/Filtering.
- To support different operating requirements, two main patterns of interactions are supported: an immediate Request/Response protocol; and an asynchronous

Publish/Subscribe protocol. The Publish/Subscribe can be further elaborated with a fetched delivery interaction to optimise the use of bandwidth.



SIRI 1.4 currently comprises the following functional services:

- Stop Timetable (ST) and Stop Monitoring services (SM) provide stop-centric information about current and forthcoming vehicle arrivals and departures at a nominated stop or Monitoring Point for display to the public.
- Vehicle Monitoring service (VM) provides information about of the current location and expected activities of a particular vehicle, and can give the current and subsequent Journey and the Calling points on each journey, together with the scheduled and expected arrival times.
- Production Timetable service (PT) exchanges information about the expected operation of a transport network for a specified day in the near future.
- Connection Timetable (CT) and Connection Monitoring service (CM) allow transport operators to exchange information about the real-time management of interchanges between feeder and distributor vehicles arriving and departing at a connection point, for example, to let passengers on a delayed train know that a local bus service will wait for them.
- Facilities Monitoring Service (FM) provides information about changes in availability of equipment.
- **Situation Exchange Service (SX) provides a fully featured service for exchanging planned and unplanned incidents between control centres and distribution systems.**
- **The General Message Service (GM) provides a structured way to exchange arbitrary informative messages between participants e.g Attribution information**

REM Interface

The REM Application server supports a SIRI interface to facilitate the exchange of incident information with other ROC technology components and 3rd party systems.

The TIBCO integration provided by System Integrator Vendor will be the ONLY interface subscribing directly to the REM Outbound SIRI interface.

The interfacing standard will export Incident information in real-time, based on certain triggers such as: Incident Status Change, Save button-click, or Publish button-click.

REM will always publish all information available at the time of publishing. The intelligent integration layer will recognise a message to contain information for a certain system (e.g. Incident Status, availability of specific incident field information ...) which will trigger a data transformation process and the handover of the information to the existing system by the intelligent integration layer.

The message structure of the specific services will be defined during the build phase in collaboration with the ROC program.
The design will take into consideration the flexibility and extensibility across the ROC and TMC for multi-modal and operating partnerships upon which will be agreed and signed off by Sydney Trains.

Recommendations

Consistent with the likely direction of TfNSW and Sydney Trains, the ASA has recently published the standard for *Public Address Systems* which mandates the SIRI protocol.

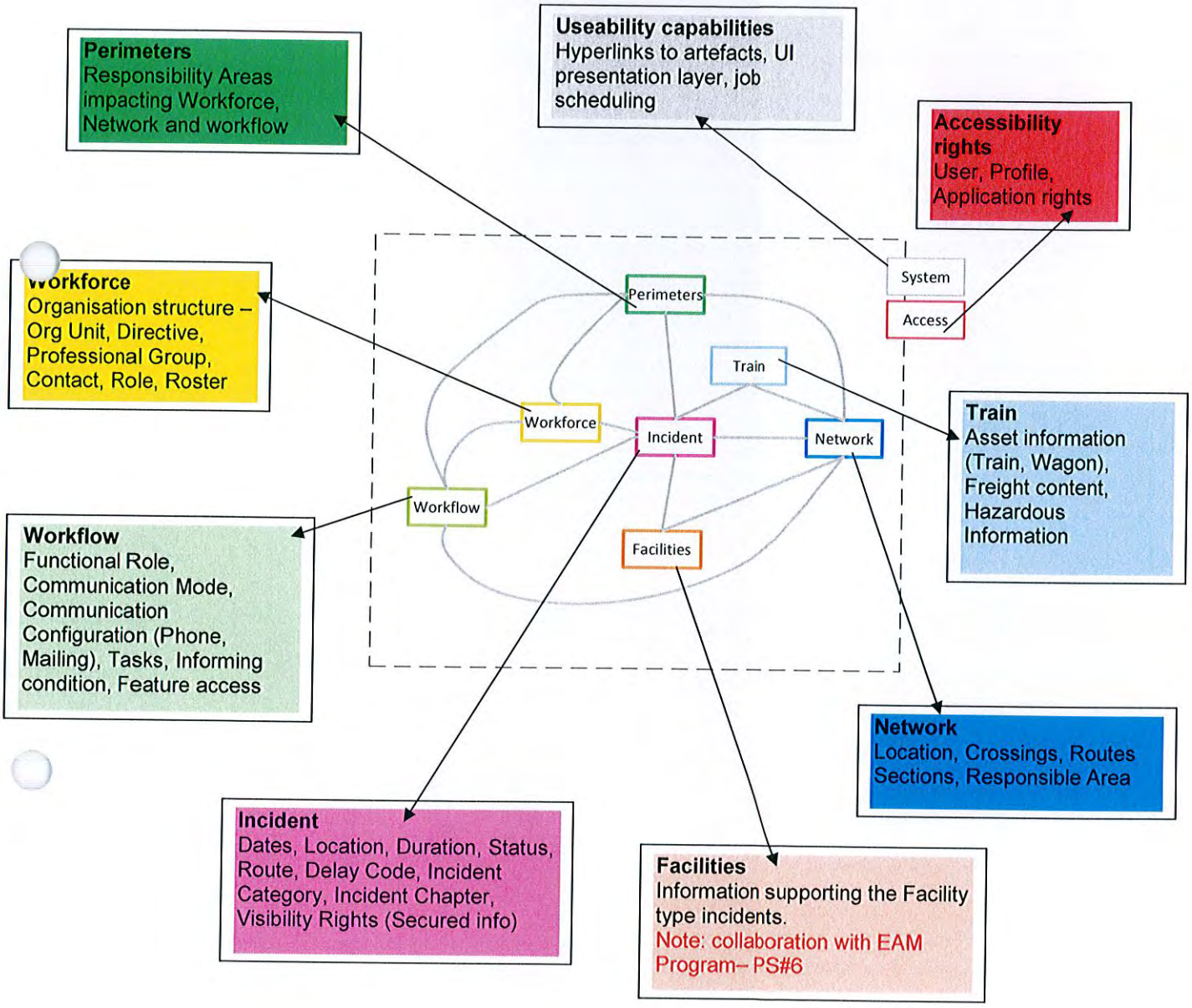
SIRI 2.0 does not appear to be fully backwards compatible with SIRI v1.4
http://user47094.vs.easily.co.uk/siri/schema/2.0/xsd/ReadMe.txt

CEN/TS 15531 currently aligns to SIRI v1.4.

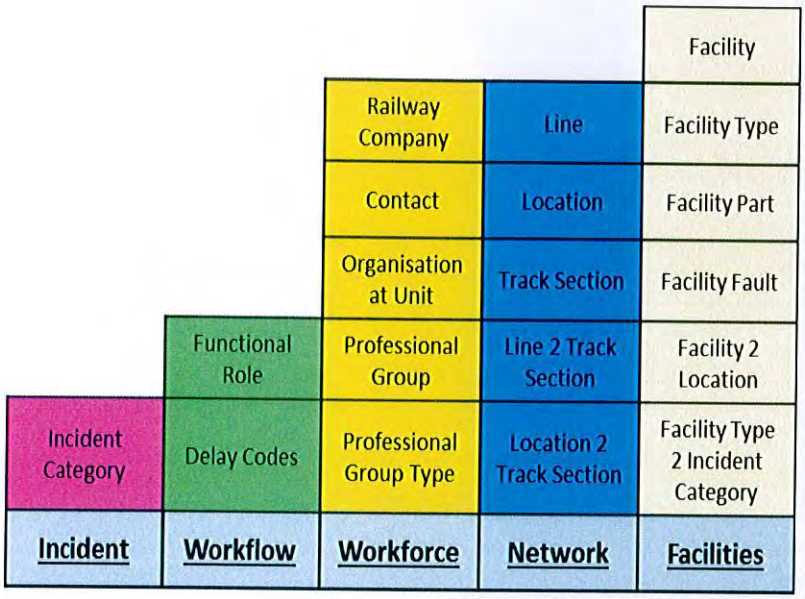
ROC recommendation is to align with TfNSW and Sydney Trains to implement SIRI v1.4.

3.5.12 REM Data Model

The REM data model below provides a conceptual view of the information required by Sydney Trains to manage, collaborate and resolve incidents impacting the 'Day of Operations".



3.5.13 REM Master Data



Master Data

Incident Category is currently being defined to support Workflows

Functional Roles and Workforce is currently being defined by ROC Transformation & Change work stream

Delay codes will be leveraging universal railway standards – UIC 450-2

Network is currently being identified as to the "best source of truth data" for ROC to utilise

Facilities is an optional master data component and will be further discussed with the EAM project.

IMS requires a defined core set of master data to enable the basic functionality of the product.

3.5.13.1 Master Data

IMS requires the following sets of master data for depicting the internal and external organisation structures:

- **Incident Category:** Incident categories are organised in a tree structure. The selected category defines the initiated workflow in form of the incident checklist and therefore should be closely tied to the process organisation for incident resolution.
- **Delay Codes**: Used for classification and causes based on an UIC directive. Will be replaced by a separate workflow step for attribution in the ROC implementation and is not mandatory master data.
- **Railway Company:** a register of Railway Companies that is relevant for train information, information contacts and attribution.
- **Contact:** the basic user repository for IMS including information and alerting contacts as well as application users.
- **Professional Group**: a listing of professions used contacts, rostering information and determination of responsibilities.
- **Professional Group Type**: a top level grouping for professions
- **Organisational Unit:** the organisational units of the railway company, used for contacts and attribution.
- **Functional Role:** A list of possible functional roles involved in the incident resolution.

3.5.13.2 Master Data – Track Network

The logical representation of the track network needs the following master data:

- **Location**: The main reference for locating an incident. These are geographical reference points as defined by the railway organisation e.g. Railway stations, Depots
- **Line**: Details the lines that make up the track network, consisting of individual track sections. E.g. the main lines T1-T7 for the suburban network; Blue Mountain, Newcastle etc. Line for the NSW area, etc.
- **Track Section**: The individual track sections that make up a line, alongside track kilometre reference points.
- **Line To Track Section:** Mapping table for assigning individual track sections to lines.
- **Location To Track Section:** Mapping table for assigning locations to individual track sections.

3.5.14 REM Configuration

The, incident categories, checklist and input fields are configurable.

Checklist items can be grouped into incident chapters that form the Incident management workflow.
Within each chapter is a range of input fields that are configurable. E.g input field names Each input field has a dedicated help text that is configurable to support the user while handling a specific incident. These help text can be configured as text templates and copied to the corresponding input field with a single touch of a button.

Note: Functional modules e.g. Train information interface or contact list views cannot be modified by the REM Data Management Client (Impacts the core IMS).

As the business matures, the incident management workflow, incident categories and incident forms can also be configured in the IMS Data Management Client. An incident form can be assigned to arbitrary incident categories, which are subsequently automatically assigned to the incident when starting an incident.

Contacts and Contact Lists
Contacts and contact lists are configurable. Preferred communication channels for each contact are configurable e.g. mobile, email. Contacts can be grouped to distribution lists that can be easily informed by clicking one button in the REM Client.

Informing Rules
Informing rules are configurable defining time, location and which incidents are semi-automatically communicated via emails and/or SMS messages.

Responsibility Model
Responsibility model defines who is responsible at a certain incident location. The responsibility model allows for a flexible configurable responsibility hierarchy. Alerting contacts and distribution lists can be assigned on any hierarchy level. To support different responsibility borders, multiple hierarches can be configured in parallel.

Dynamic Chapters and Dynamic Fields

The REM product is highly configurable which enables the business to develop Dynamic Chapters and Dynamic Fields enabling the business to evolve with its maturity needs.
Key callouts:

- Change release management needs to be in place to ensure the changes rolled out are managed to mitigate any "adhoc" changes impacting the operational business.
- Business logic impacts flows down with dynamic fields to Reporting

3.5.15 Data Classification

Information/Data classification is required to enable the development of appropriate secure architecture. A table of protective markings used in NSW are included as **Annexure A** with this brief.

Mitigation of the risks associated with REM data will also ensure compliance with NSW Government Information Classification and Labelling Guidelines and Premier's Memorandum Digital Information Security Policy (M2012-15).

In addition to information security classification, it is necessary that system and data ownership be identified to ensure REM data is accessed and managed appropriately on an on-going basis.

As part of the ROC REM implementation, the 2 key deliverables are:

1. **REM Data Classification:** The data/information classification level is essential in order to design and implement appropriate security controls for the REM system.
2. **Risk Assessment of the REM system and Information security:** Identified the major risks in regards to the REM system and information security.

CURRENT POSITION

The analysis of the REM data classification made a determination that the data sets shall be classified as:

- **Unclassified-Sensitive & Unclassified-Personal:**
  Applicable to all data available at the REM application and workstations due to person profiling and imagery

- **Unclassified**:
  Applicable to all data at the historian (whether internal to REM application or externally integrated) that is not classified as Unclassified-Sensitive & Unclassified-Personal. The same classification is applicable to the REM data accessible and/or transfer to remote computers.

The detailed analysis is included in **Annexure B** for reference.

RECOMMENDATION

The recommendation is for the Director of Operations approves the REM data classification to be:

- Unclassified-Sensitive and Unclassified-Personal data at the REM application and workstations
- Unclassified, for data at REM Historian and remote computers.

3.5.16 Release 1 Technical Go-live for Business Rollout

The ROC program is committed to delivering early business benefits and reducing delivery and operational risks by rolling out improved processes that leverage new technology deployed in existing locations.
The technology "Technical Go Live" milestone will be implemented in production fully configured and this will enable the Transformation and Change team to undertake incremental rollout approach with the business.

The Release 1 REM solution is a complex technology solution to support the centralised incident management model with an incremental business rollout as well as ensuring business continuity with the existing incident management systems and transitioning business users to the NEW REM incident management system in transforming the business into the future simplified technology and business landscape.

The proposed business rollout strategy is based upon the number of staff using REM. The users identified as PRIMARY incident management users are:

- **CIU** – Only Team Leaders (Central Level 2), Senior Customer and Information officers, and Customer Information Officers (RMC) will need access to REM
- **Security** – Only SCC Supervisors, SCC Operators (RMC), Security Managers (Central Level 2) and SMF Supervisors (Central Level 1) will need access to REM
- **TCAC** – Only TCAC Team Leaders and Crew Assignment Officers (TCAC Central) will need access to REM
- **ICON** – Only the Duty Managers and the CCS Operator (Central Level 1) will need access to REM
- **Fleet** – Only Fleet Operations Controllers (RMC) will need access to REM
- **Signal Boxes** – Signal Box Managers and Supervisors (Homebush, Strathfield, Newcastle, Sutherland, Sydenham, Redfern, Wollongong, Valley Heights and Blacktown)will access REM regardless of whether their Signal Box will eventually move to the ROC (Note; not all Signal Boxes have a Signal Supervisor)
- **RMC** – Shift Managers, Train Controllers, TCLO, TMO, TMO Supervisor, Ops Control Supervisor, Trainers, Assistant Manager and RMC Manager (RMC) will need access to REM

There are upstream and downstream users and these will also be factored into the rollout based upon their role in incident management or incident reporting functions.

If the Business rollout evolves to a single phase business rollout, this would simplify the solution and delivery on many dimensions in supporting the transformation, adoption and early benefits:

- Reduce the development within the integration to cater for legacy and REM for a transitional period
- Simplify the End-to-End solution testing
- Reduce Enterprise release management
- Support technology strategic simplification – reduce IT and project costs
- Streamline business processes
- Reduce business confusion with legacy and ROC
- Simplify attribution
- Simplify reporting solution

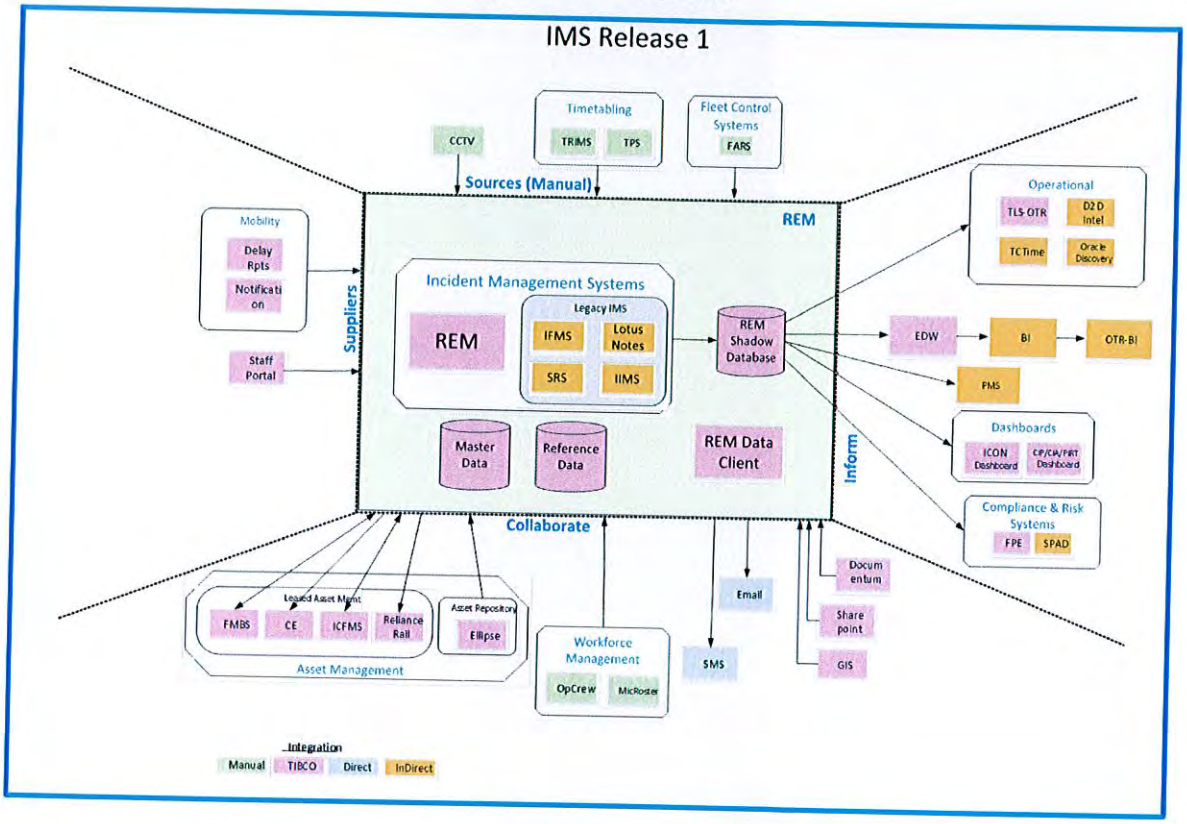
To support and mitigate the risk of the single phase business rollout, the program would need to:

- Ensure contingency solution is comprehensive
- Ensure post-go-live support is championed and owned
- Business champions and has clear communications and endorsement on the rollout

4 Application Architecture

4.1 Application Context – Transitional State

The following diagram, highlights the applications in scope of ROC IMS Release 1 is focused on the operational management of incidents.



The participating applications (new and existing) can be categorised into the following logical categories for a better understanding:

1- **Notifiers** - notification applications:
These applications provide input communication channels available to Sydney Trains front line staff and operational technology applications of potential incidents and early warning systems to support quicker incident resolution and mitigation of incidents escalating to compounding levels.

2- **Sources** – Existing applications supporting incidents:
These applications provide Incident Manager with incident supporting information related to Train timetables for Passenger and Freight trains, Train Consist and CCTV imagery.

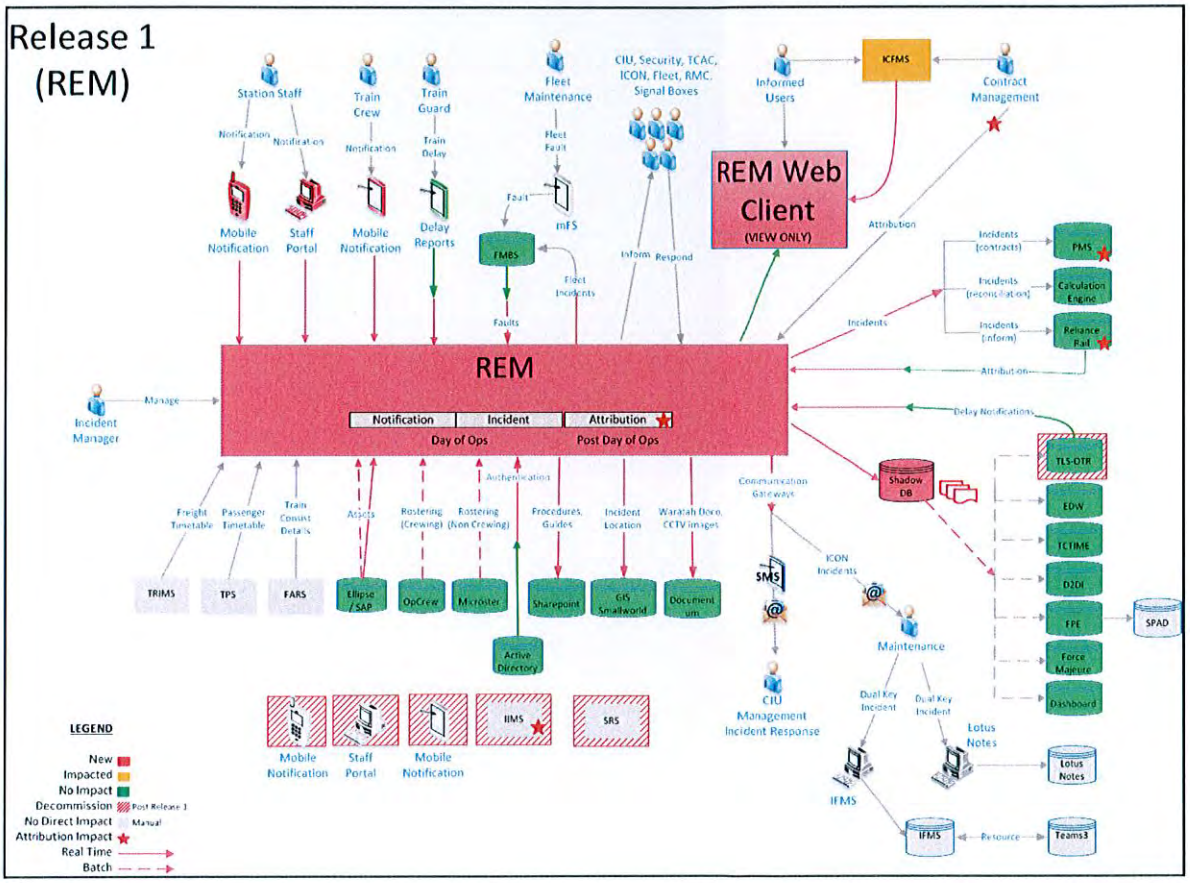
3- **REM** - New COTS application introduced in the current ICT landscape:
REM IMS is a new business application which will integrate with Sydney Trains applications to provide the required business capabilities for operational incident management

4- **Collaboration** – Existing applications supporting collaboration of incidents:
REM is a new business application which will integrate with the above applications to provide the required business capabilities for operational incident management

5- **Inform** - Existing application to facilitate the reporting:
The REM Shadow database provides Sydney Trains with options of near real-time reporting and archiving to the EDW for historical reporting.

4.2 Release 1 Application Inventory Overview

The **heat map** of system impacts supported by the Release 1 solution are shown below:



4.3 REM Product Suite

4.3.1 REM Alerting Server

Description	The REM Alerting server publishes communication alerting messages to responsible parties involved in incident resolution or informing. Alerting message protocols are: - Email via SMTP protocol - SMS via Telstra SMS Gateway. Release 1 is Outbound SMS only - Voice Mail (Note: Out of scope for ROC Release 1) **REM 2016.R1 Customisations:** - Sydney Trains to provide Outbound SMS communication specification via the Telstra SMS Gateway using TIMS integration standards.

4.3.2 REM Application Server

Description	The REM Application server is used for integration and information exchange. It hosts the following modules: - **Web Portal Backend** Used to access incident information via the REM Web Portal. It can receive a current list of open incidents, as well as the incident details (open and closed) and rostering access in read only mode. - **Notification** Used for receiving Notifications from multiple input channels - **Data Integration** Used to integrate with downstream systems to distribute incident information and upstream systems to receive information for supporting incident resolution. **REM 2016.R1 Customisations:** - Support inbound Notification messages - Support outbound SIRI format Incident messages

4.3.3 REM Data Management Client (DMC)

Description	The REM Configuration Data Management Thick Client allows a System Administrator to manage the configuration of all data required for the operation of the REM product: • Workflow and Checklist Configuration • Contacts and Contact Lists • Informing Rules • Responsibility Model

	REM 2016.R1 • **Configuration is manual upload or manual entry via DMC** • **Drop down lists are not managed in the REM DMC** • **Manual entry of Actual workforce availability into DMC**

4.3.4 REM Emergency Management Client (EMC)

Description	The REM Emergency Management Thick Client provides support for notifications, creation and identification of incidents, assignment of priority, allocation of pre-planned workflows, tracking of progress, escalation, attribution and reporting. The master data supporting the REM EMC are: • Incident Categories structure support the identification of workflows upon which to manage the resolution of incidents - **PS#2** • Delay codes (UIC 450-2) is associated to incidents which enables the common measurement of services and analytics to influence performance. • Responsibility Model – Functional Roles and Workforce • Network • Infrastructure (Rail and non-Rail) **REM 2016.R1 Customisations relating to configuration:** - Launching of Sydney Trains Smallworld GIS instance - Notification Overview User Interface

4.3.5 REM Messaging Server

Description	The REM Messaging server provides a Java Message Queue (JMS) Message Broker for internal communication between the REM system components in exchanging information: - REM Emergency Management Client - REM Alerting Server - REM Application Server **REM 2016.R1 Customisations:** - Support Notification messages - Support publishing of Incident messages

4.3.6 REM Web Portal

Description	A new Web Portal runs on a browser and has 3 key functions: - **Incident Viewer** Used to receive a current list of open incidents, as well as the incident

	details (open and closed) in read only mode. - **Standby Client** Used to edit the shift of a staff member of a standby team or change the contact number for a specific shift of a staff member - **Audit Log View** Used to access the audit log of specific incidents and have read only view. **REM 2016.R1 Customisations - None**

4.4 Release 1 System Integrated Applications

4.4.1 Calculation Engine (CE)

Description	Integrated Contract and Fleet Management System/CALCULATION ENGINE provides the capability for Users to access Fleet Operation functions in passing information to calculate complex payment schedules as result of incidents involving Waratah fleet
Strategic Alignment	Strategic
Change Description	• Provide ad-hoc and monthly reconciling information related to incidents for Waratah fleet management with external supplier. • Current IIMS integration with CE cannot be disabled until all **active legacy incidents** have been CLOSED / FINALISED / COMPLETED (statuses will need alignment across legacy and REM).
Change Impact	• REM extract Waratah fleet Incident reconciliation information to be sent to CE via TIBCO • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability to the legacy system. • Regression testing - TIBCO middleware will ensure the incident integration from the OLD IMS system service has not been diminished.

4.4.2 Ellipse

Description	Ellipse provides a comprehensive suite of Integrated Management System (ERP) applications to the business. Ellipse will provide the source of truth for all asset data for the ROC IMS Release 1.
Strategic Alignment	Strategic
Change Description	The new REM product will integrate with the TARGET asset management system (OLD=Ellipse, NEW=SAP) to source asset information for incident management. Fleet information may be available in EAM-SAP when Release 1 is deployed. However, Network assets will still be available in Ellipse.

Change Impact	• IMS will send SIRI request via TIBCO to TARGET system to source asset information. • IMS will receive SIRI response via TIBCO from TARGET system of asset information. • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability to the legacy system. • Regression testing - TIBCO middleware will ensure integration system service has not been diminished.– EAM program interdependency program – **PS#6**

4.4.3 Email Server

Description	Sydney Trains Email server for receiving and sending emails.
Strategic Alignment	Strategic
Change Description	• Email communication functionality to notify or inform persons. • Transitional phase (Release 1&2) - Email incident information to Customer channels to provide consistent, accurate information to customers prior to CIMS integration
Change Impact	• Integration with Email gateway for sending emails to inform consumers of incident information. • Early enabler – Provide CIU with Email distribution list to send incident information during the Transitional phases (Release 1 & 2)

4.4.4 Documentum

Description	Documentum alias ECM (Enterprise Content Management system) is an Online document storage system Security Monitoring Facility (SMF), Integrated Contract and Fleet Management System (ICFMS) and Procurement Transformation business units use Documentum software for their operations. On demand distribution of the selected CCTV footage to authorised users The SMF manages the CCTV footages that comes from the cameras across the Sydney Trains network, both on stations and on trains including Waratah trains. ICFMS stores all correspondence with external vendor Reliance as records in Documentum.
Strategic Alignment	Strategic
Change Description	Apps uploading images into Documentum and link captured in REM Retrieving images from Documentum and present on REM devices

Change Impact	(a) Images and videos will upload/download photos Documentum via TIBCO (b) Photos will be resized to less than 2MB (normally around 300K) (c) Photos and Videos are stored in folder structure with incident identifier (d) Once images are upload into Documentum then a link is updated against the REM incident record

4.4.5 Fault Management Business system (FMBS)

Description	Record and manage faults and defects found on rolling stock using the Integrated Contract and Fleet Management System (ICFMS) Fault Management System (FMS) portal. Faults for all fleet types are entered into the FMS and then routed to other database applications corresponding to what is used by the fleet manager to manage defects. When a fault is entered into the FMS, a defect record is created automatically in the relevant database application. Conversely, when a defect is closed in the database application, the associated fault is automatically closed in the FMS. Faults for Waratah A-Sets may also be entered into MAXIMO by Reliance Rail.. Critical faults are automatically routed to the Incident Information Management System (IIMS).
Strategic Alignment	Strategic
Change Description	• To link fleet faults to an incident. • The new IMS product will integrate with the TARGET asset management system (OLD=FMBS, NEW=SAP) to source asset fault information for incident management. EAM Interdependency program – **PS#6** • Faults are manually linked to an incident in FMBS. FMBS sends related fault # for a particular asset to IMS to be linked to an incident. • Auto incident creation from FMBS for Waratah fleet will generate a notification. • Current FMBS integration with IIMS cannot be disabled until all **active legacy incidents** have been CLOSED / FINALISED / COMPLETED (statuses will need alignment across legacy and REM).
Change Impact	• REM extract Waratah fleet Incident to be sent to FMBS via TIBCO • REM will receive fault notifications for a related incident via a REM notification format • TIBCO will translate the Auto incident created from FMBS into a Notification for REM. • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability with the legacy system. • Regression testing - TIBCO middleware will ensure the incident integration with the OLD IMS system service has not been diminished.

4.4.6 Geospatial Information System (GIS)

Description	A geographic information system (GIS), is a system for capturing, storing, analysing and managing data and associated mapping co-ordinates which are spatially referenced to ST.
Strategic Alignment	Strategic
Change Description	• GIS is needed to provide visual representation for Location, Geospatial and Geographical information to enable collaboration management to support an automatic zoom to the incident location of an incident. • Sydney Trains currently has 3 separate instances of Small World. These legacy systems has been specified for consolidation in the EAM program – **PS#6** • Master Data for GIS coordinates required to support capability.
Change Impact	• IMS to send GIS coordinates using the HTTP URL e.g. *http://webgis/zoomto?lon=123&lat=132* The GIS viewer (web based) can be integrated directly in a widget within the application or a dedicated application window.

4.4.7 Identity Access Management (IAM)

Description	The Identity Access Management (IAM) holds the personnel identity information and also provides authorisation and authentication for users in the Sydney Trains network (Employees, Contractors and Non-Employees) when accessing Sydney Train Applications via their workstation (PC Desktop) or Mobility tools.
Strategic Alignment	Strategic
Change Description	• The LDAP integration of the Active Directory data will be utilised to ensure authorisation and authentication for accessing the new REM system with "SAME sign on". • Project deployment in progress • Sun IAM replaced by Oracle IAM 11gR2 on a new platform – Red Hat Linux on x86 servers
Change Impact	The new REM authorisation requires a user group created in IAM - Create the Organisational Unit "***REM***" Group in the Active Directory REM will use LDAP protocol to integration directly with Active Directory.

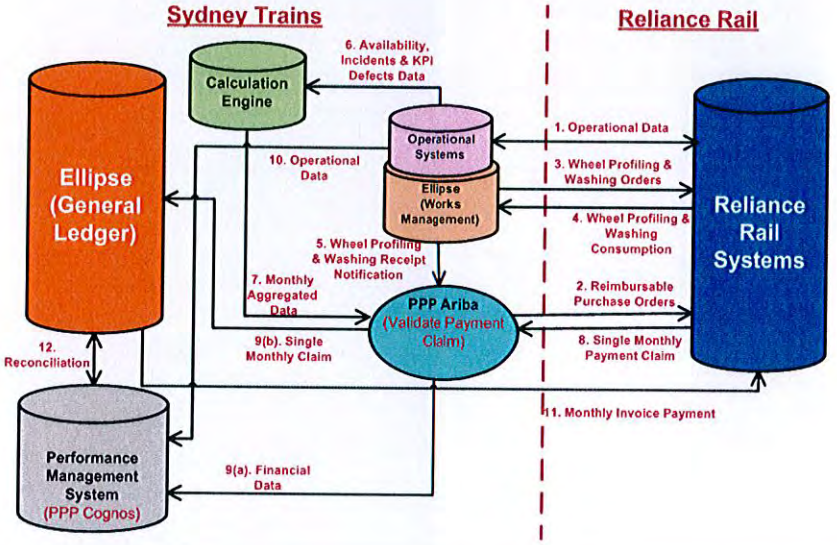
4.4.8 Performance Management System (PMS)

Description	PMS (Performance Management System) is the BI component of the PPP (Public Private Partnership) program (ICFMS) with Reliance Rail.

	The system focuses on reports used by Commercial Contract and Fleet management team of Waratah fleet to support the contract metrics which includes financial reporting, train set reliability and availability. The reports for Fleet performance including drilldown for incidents /faults and also for commercial purposes to figure out all payment impacts Etc.
Strategic Alignment	Strategic
Change Description	• The new REM system will capture train related incidents. • Waratah incidents to be included in the business reporting.
Change Impact	The ROC program has an **obligation** ensure existing business reporting is not impeded and **business opportunity** to drive reporting improvements thru further analysis needed to understand business reporting continuity and attribution process on the timing criticality of the information to be available to assist in PPP Contractual Reporting – **PS#3** **Caution:** PMS is currently integrated via the incident notification stream to ICFMS i.e. FMBS, RR B2B Gateway, CE and PMS all feed from the same TIBCO queues. Further analysis is required at the technical analysis phase to identify the impact on the integration for PMS.

4.4.9 Reliance Rail B2B Gateway

Description	Public-Private Partnership (PPP) contract was developed between Sydney Trains and Reliance Rail. Reliance Rail is responsible for the delivery, operation and maintenance of A-Sets (Waratahs). Gateway was required between parties to manage End-to-End processes: - Contract Payment Mechanism Process - Fault and Defect Process - Incident Management Process - Allocation of Sets to Runs - Fleet Availability - Maintenance requests - Timetable information publication - Incident investigation, etc.
Strategic Alignment	Strategic
Change Description	• Integrate via Reliance Rail integration in receiving detailed incident/defect information relating to Waratah fleet for purposes of operations, contract payments and attribution • Integrate via Reliance Rail integration in providing detailed incident information relating to Waratah fleet incidents/defect/fault • The current Reliance Rail integration with IIMS cannot be disabled until all **active legacy incidents** have been CLOSED / FINALISED / COMPLETED (statuses will need alignment across legacy and REM).

Change Impact	• REM extract Waratah fleet Incident to be sent to Reliance Rail via TIBCO • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability to the legacy system. • Regression testing - TIBCO middleware will ensure the request and response to/from TARGET legacy source asset system service has not been diminished. The operational complexity of Sydney Trains and its Operating Partner (Reliance Rail) 

4.4.10 Sharepoint

Description	Microsoft SharePoint Application with ECM and Loronix systems is used as an enterprise collaboration platform for automated handling.
Strategic Alignment	Strategic
Change Description	Hyperlinks access to source supporting artefacts (CCTV footage, plans, procedures, etc) for incident resolution Interdependency project impacts providing incident supporting artefacts (**PS#14**) : - ACJP – Alternative Customer Journey Plans (Static) - Sophia – Document Content Management
Change Impact	• Hyperlinks to be captured in REM to provide access to Incident supporting artefacts stored in Sharepoint.

4.4.11 Short Messaging Service (SMS) Gateway

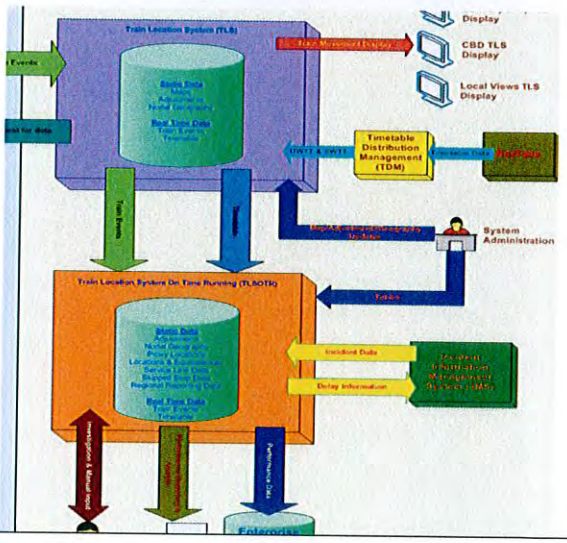
Description	Telstra provides Sydney Trains with a fully managed Application Service Provider (ASP) Integrated Messaging capability hosted on a Mobile Enterprise Messaging Gateway Platform and Short Message Service Centre. Current contract is Outbound SMS messaging ONLY.
Strategic Alignment	Strategically Aligned - The REM COTS product offer a 2 way SMS communication capability – **PS#9** Release 1 – Sydney Trains SMS provider "Telstra" is currently contracted to ONLY provide Outbound SMS Release 3 – Assess Contracts with Telstra for 2 way SMS communications
Change Description	REM offers a two-way SMS communication with personnel which allows immediate feedback in regards to the message being delivered, read and how the recipient has replied to it.
Change Impact	Integration with SMS gateway for sending Outbound SMS messages from REM. Current integration with SMS gateway is initiated via ICFMS to TIBCO and through to SMS Gateway using a TIMS protocol.

4.4.12 TIBCO

Description	The purpose of TIBCO is a middleware layer providing integration, analytics and events processing between systems.
Strategic Alignment	Strategic
Change Description	Develop transformation, translating and routing integration software between REM and the integrating system. The downstream integrating systems data content is to remain legacy and the REM integration system data content will be "Fit for purpose" for NEW incident management processing.
Change Impact	Develop TIBCO transformation, translating and routing integration software between REM and its integrating systems.

4.4.13 TLS-OTR (Train Location System – On-Time Running)

Description	The TLS (Train Location System) provides a graphical interface of train locations and statuses. Daily Train Timetables and Train Events are passed to TLS-OTR. The purpose of TLS-OTR system allows Train Operations to be able to code and share incident related information between the operational incident system and

	TLS-OTR to facilitate business process improvement within Train Operations by removal of duplication of effort associated with recording of incidents and train delays by providing one version of information for reporting purposes.
Strategic Alignment	Strategically Aligned Release 1 – integrate with TLS-OTR to provide business reporting continuity Release 3 – assess the future business reporting requirements with the introduction of DTTS
Change Description	Automate notification creation for Delay message from TLS-OTR REM will provide incident # for uploading into TLS-OTR The delay reporting and new IMS incident information is required for TLS-OTR reporting
Change Impact	TIBCO to create notification from TLS-OTR delay message TIBCO to provide update to TLS-OTR with incident # for delays Further analysis is needed to understand business reporting continuity and whether this information will be available from DTTS or mIIMS delay reports from REM need to be integrated to source this information to assist in On Time Running Reporting – **PS#1, PS#3** 

4.5 Release 1 Input System Integrated Applications

This section has been specifically grouped to enable the Sydney Trains development team to leverage existing software and undertake enhancements to support the ROC Release 1 solution.

The integration component with REM will be the responsibility of the Vendors to support the delivery of the solution.

4.5.1 Integrated Contract and Fleet Management System (ICFMS)

Description	A portal to manage faults and defects found on rolling stock using the Integrated Contract and Fleet Management System (ICFMS) Fault Management System (FMS) portal.
Strategic Alignment	Strategic
Change Description	• The ICFMS portal enabled for Contract Management and Users to access the new Web Client REM system. • **Caution:** The current ICFMS integration with IIMS cannot be disabled until all **active legacy incidents** have been COMPLETED and ARCHIVED and the IIMS functionality gap has been assessed and addressed.
Change Impact	• A NEW quick link will be provided Contractors and Users to access, launching the REM Web Client (View Only) system • TIBCO middleware to manage the integration between the source and target systems and ensure leveraging the existing interfacing capability with the legacy system. • Regression testing - TIBCO middleware will ensure the incident integration with the IIMS and FMBS system service has not been diminished. • Reporting solution - business reporting continuity required on the existing IIMS and NEW REM "incident washup" finalisation reports – **PS#3** **Note:** The current ICFMS authentication with IIMS is single sign-on. The authentication for a quick link to REM Web Client will be same sign-on to align with the architectural security principles. The users identified with access to the current IIMS for updating is the Contract Management team for attributions. If this is the only group, then ICFMS launch feature will not be required as these users will require REM EMC access.

4.5.2 Mobile Delay Report

Description	Leveraging the existing Sydney Trains Mobility input channel to enable Train Crew employees to report train delays electronically which is then automatically transmitted directly into RMC as notifications for resolution.
Strategic Alignment	Strategically aligned

	Opportunity to disable functionality and decommission if DTTS is able to provide automated train delay functionality in Release 3.
Change Description	• Provide delay notifications to REM notification box to enable delay information to be reported in TLS-OTR.
Change Impact	• Retain current state application functionality for Release 1 • Redirect Mobile Delay Reports originally directed to IIMS to REM Notification box. • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability to the legacy system. • Further analysis is needed to understand whether this information will be available from DTTS or Mobile delay reports need to be integrated to source this information to assist in On Time Running Reporting – **PS#1, PS#3**

4.5.3 Sydney Trains Mobile Notification for iPhone

Description	The existing Sydney Trains mIIMS Notification channel enables front line employees with mobile phones to capture events electronically which is then automatically transmitted directly into IIMS for resolution. The REM COTS mobile notification capability is NOT available till Release 3. To ensure business continuity has not been diminished, the Release 1 solution recommends develop a Sydney Trains Device Agnostic Notification capability
Strategic Alignment	Strategically Aligned This will enable the early adoption of operational efficiency and transformation for incident management ahead of the REM notification capability planned for Release 3. Release 3 Option for business to assess the Sydney Trains notification mobile need and usage with: 1. Introduction of the REM mobile rollout and its alignment with a COTS offering. 2. REM Mobile licensing costs 3. Decommissioning of the Sydney Trains mobile notification capability
Change Description	Enable front line staff with mobile access to provide incident Notifications of an event to the REM notification hot box which may result in RMC resource in creating or appending information to an incident. **Note:** The iOS apps will be put to individual devices by the ICT Mobility team. Mobile connectivity will be implemented via the *Transport TfNSW Mobility Service* for network connectivity to the ICT network. The user will authenticate with their existing LAN username and password. Users will need to be set up in IAM/Enterprise Directory with their LAN credentials and have an Active/Enterprise

	Directory account for VPN connectivity.
Change Impact	• Develop a NEW Mobile Notification application to provide sufficient mandatory and minimal information for REM Notification creation • Direct Mobile Notifications generated on the new Mobile application to REM Notification hot box • Disable the Mobile Notification functionality into IIMS (dependent on business incremental rollout). • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability to the legacy system. • Regression testing - TIBCO middleware will ensure the request and response to/from TARGET legacy source asset system service has not been diminished. • **Key consideration in development** Developing a web based application that is device agnostic (phone, tablet, PC)

4.5.4 Sydney Trains Mobile Notification for Tablet

Description	The train crew currently have been issued with IPADS for communicating of Train delays. The REM COTS mobile notification capability is NOT available till Release 3. To enable the train crew to raise notifications the Release 1 solution recommends develop a Sydney Trains Tablet Notification capability
Strategic Alignment	Strategically Aligned This will enable the early adoption of operational efficiency and transformation for incident management ahead of the REM notification capability planned for Release 3. Release 3 Option for business to assess the Sydney Trains notification tablet need and usage with: 1. Introduction of the REM mobile rollout and its alignment with a COTS offering. 2. REM Mobile licensing costs 3. Decommissioning of the Sydney Trains tablet notification capability
Change Description	Enable Train crew with tablet access to provide incident Notifications of an event to the REM notification hot box which may result in RMC resource in creating or appending information to an incident.

	Note: The iOS apps will be put to individual devices by the ICT Mobility team. Mobile connectivity will be implemented via the *Transport TfNSW Mobility Service* for network connectivity to the ICT network. The user will authenticate with their existing LAN username and password. Users will need to be set up in IAM/Enterprise Directory with their LAN credentials and have an Active/Enterprise Directory account for VPN connectivity.
Change Impact	• Develop a NEW Tablet Notification application to provide sufficient mandatory and minimal information for Notification creation • Direct Tablet Notifications generated on the new Tablet application to REM Notification hot box • Disable the Tablet Notification functionality into IIMS (dependent on business incremental rollout). • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability to the legacy system. • Regression testing - TIBCO middleware will ensure the request and response to/from TARGET legacy source asset system service has not been diminished. • **Key consideration in development** Developing a web based application that is device agnostic (phone, tablet, PC)

4.5.5 Sydney Trains Staff Portal Notification

Description	The existing Sydney Trains Staff Portal Notification channel enables employees with web browser access to capture events electronically which is then automatically transmitted directly into RMC for resolution. The REM core product has a product gap and the solution proposed is to capture notifications via the REM mobile notification capability available in Release 3. To ensure business continuity has not been diminished, the Release 1 solution recommends develop a Sydney Trains Staff Portal notification capability
Strategic Alignment	Strategic Aligned This will enable the early adoption of operational efficiency and transformation for incident management ahead of the REM mobile notification capability planned for Release 3. Release 3 Option for business to assess the Sydney Trains notification capability need and usage with: 1. Introduction of the REM mobile rollout and its alignment with a COTS offering.

	2. REM Mobile licensing costs 3. Decommissioning of the Sydney Trains staff portal capability
Change Description	Enable front line staff with web browser access to provide incident notifications of an event to the REM notification hot box which may result in RMC resource in creating or appending information to an incident.
Change Impact	• Develop a NEW Staff Portal Notification application to provide sufficient mandatory and minimal information for Notification creation • Direct Notifications generated on the new Staff Portal to REM Notification hot box • Disable the Staff Portal Notification functionality into IIMS (dependent on business incremental rollout). • TIBCO middleware will manage the integration between the source and target systems and ensure leveraging the existing interfacing capability to the legacy system. • Regression testing - TIBCO middleware will ensure the request and response to/from TARGET legacy source asset system service has not been diminished. • **Key consideration in development** Developing a web based application that is device agnostic (phone, tablet, PC)

4.6 Release 1 Manual Integrated Applications

4.6.1 CCTV

Description	CCTV is a discreet and continuous monitoring capability of an area or station by providing live surveillance and capturing footage for future viewing that is potentially related to an incident. The SMF manages the CCTV footages that comes from the cameras across the Sydney Trains network, both on stations and on trains including Waratah trains. Documentum is the application that stores and provides On demand distribution of the selected CCTV footage to authorised users.
Strategic Alignment	Strategic
Change Description	The new REM product can enable manually tagging of footage and images to an incident via a hyperlink
Change Impact	Regression testing - No system changes. When a video is to be captured for an incident, the video is **manually** classified (BAU process - transferred from the current location to Documentum) and a hyperlink is attached to the incident

	Manual process needs to ensure the link of the correct video is to the correct incident.

4.6.2 FARS

Description	source of truth for train consist (trip to set allocation) Providing information to help staff plan and manage train sets allocated to runs for maintenance, day of operation planning and live timetable adjustments.
Strategic Alignment	Strategic
Change Description	No changes to current state
Change Impact	Manual Integration Identified as possibly providing more accurate information to link Set (make up the consist) to TRIP This will be validated during the technical analysis phase.

4.6.3 RR – Reliance Rail Attribution

Description	Current IIMS is B2B integrated with Reliance Rail for Incident Attribution processing. The Reliance Rail attribution process is constrained by SLA's.
Strategic Alignment	Strategically Aligned Input into REM is via XSD
Change Description	Manually copy Reliance Rail incident attribution information into REM.
Change Impact	TIBCO will decipher and transpose the Reliance Rail Attribution information into a notification which is automatically uploaded into REM for manual entry against an incident.

4.6.4 TPS – Timetable Publication System

Description	The Timetable Publication System provides electronic timetable publication to other systems within Sydney Trains and authorised external systems. This timetable information is maintained in its defined form irrespective of any changes to Train Planning databases. Timetable information to downstream systems that have been authorised by Train Planning.
Strategic Alignment	Strategically Aligned **(PS#1)**

	Release 1 – Manually integration Release 3 – DTTS Integration
Change Description	Passenger Train timetable information is available for supporting incident management.
Change Impact	Regression testing - No system changes for TPS.

4.6.5 TRIMS

Description	The TRIMS application is a Freight Train timetabling information
Strategic Alignment	Strategically Aligned **(PS#1)** Release 1 – Manually integration Release 3 – DTTS Integration
Change Description	Freight Train timetable information is available for supporting incident management.
Change Impact	Regression testing - No system changes for TRIMS.

4.7 Workforce Management

4.7.1 MicRoster

Description	Microster is a rostering and leave system for managing station staff, signalling staff, Countrylink Call Centres and CountryLink Onboard Crew.
Strategic Alignment	Strategically Aligned Staff rostering information would be beneficial as incident contact points. MicRoster does not contain "Rostered off" staff therefore the contacts are inaccurate for a resourcing contact purpose – **PS#8** Workforce Management projects in the pipeline with a key objective of a consolidated real time organisational view of rostering, actuals and availability. REM COTS product can enable the business to manually manage staff actuals and availability via UI.
Change Description	Provide MicRoster resourcing contacts with a batch bulk extract of rostering data for uploading into REM.
Change Impact	• Master data management to provide a Snapshot of rostered resources for uploading to REM • REM COTS product offers functionality for manually managing actuals and

	availability of rostered staff for the "Day of Ops"

4.7.2 OpCrew

Description	The OpCrew system provides scheduling, rostering and day-of-operation management for **Train Crewing staff.** OpCrew has three logical levels for rosters – - *Master* roster is laid out unto 6-12 months in advance, - *Published* roster is then laid out unto 2 weeks in advance (one period) and is more accurate then *Master* layer - *Day of Operation* roster is laid out 1 day in advance which is the actual reflection of an employee's schedule and used for managing their exception.
Strategic Alignment	Strategic Aligned Train Crew rostering information would be beneficial as incident contact points. Op Crew does not contain "Rostered off" staff therefore the contacts are inaccurate for a resourcing contact purpose – **PS#8** Workforce Management projects in the pipeline with a key objective of a consolidated real time organisational view of rostering, actuals and availability. REM COTS product can enable the business to manually manage staff actuals and availability via UI.
Change Description	Provide Train Crew resourcing contacts with a batch bulk extract of rostering data for uploading into REM.
Change Impact	• Master data management to provide a Snapshot of rostered resources for uploading to REM • REM COTS product offers functionality for manually managing actuals and availability of rostered staff for the "Day of Ops"

4.8 Reporting Applications

The following applications identified within the Conceptual Solution (PCAR) have been validated during the Detail Design phase and deem them to be part of the Release 1 reporting solution.

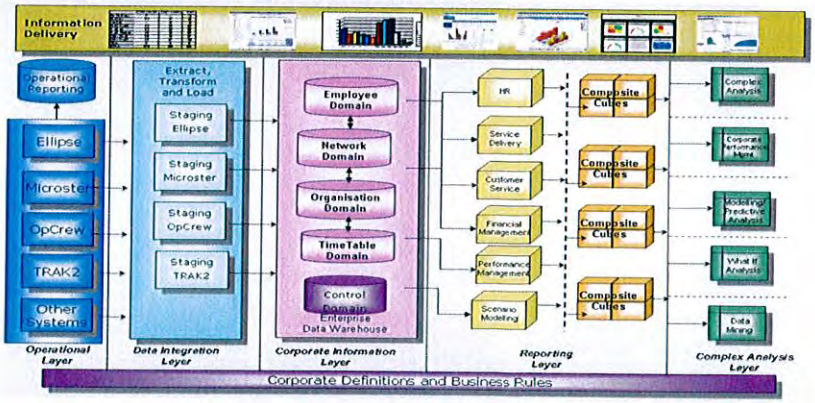
The ROC program must ensure existing business reporting is not impeded and ensure business reporting continuity for regulatory reporting.

This section has been specifically grouped to enable an opportunity for the ROC program to provide solution options that meets the current business requirements as well as support the business in achieving benefits through organisational behaviours supported by reporting.

The reporting grouping provides a clear delineation from the core incident management solution with the REM shadow database as the initiating source for the solution.

- Assess the legacy reporting with focus on purpose and operating efficiencies in reducing the complex technology and business reporting landscape
- Implement new performance management reports and links to targets that drive business improvement and provides a common currency of measurement enabling comparisons to be made and improvements to be prioritised
- Provide information reporting consistency across business units, directorates and organisational levels

4.8.1 BI – Business Intelligence

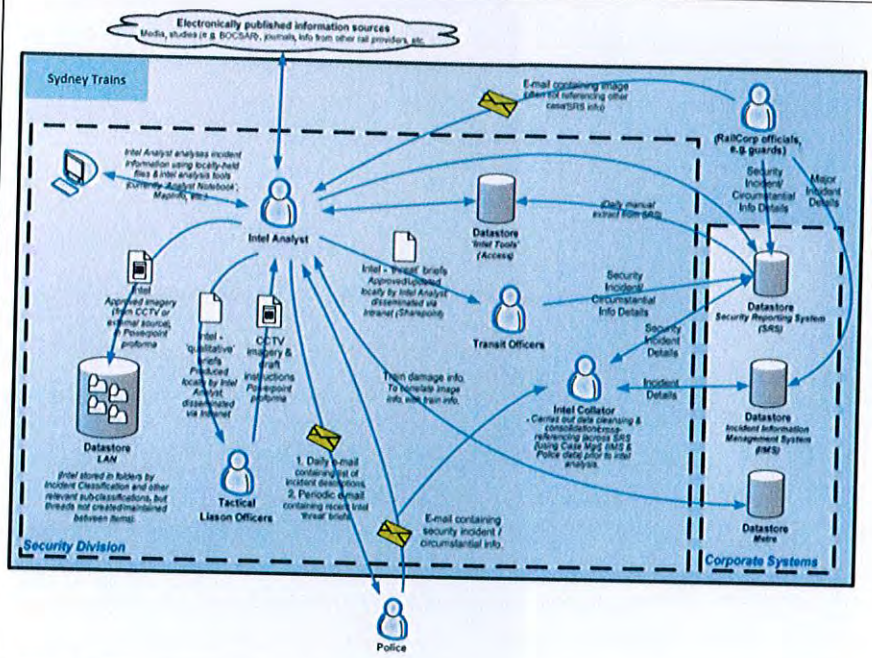
Description	Sydney Trains aims to improve information systems that support core business functions and aligns these processes more closely with key business improvement initiatives. The enterprise BI platform provides the end-to-end environment from source systems through to provisioning of BI information for complex analysis. The strategic platform will help to conform information domains within the enterprise data warehouse (EDW) into a single source of truth to produce managerial and operational reporting (Parliament Inquiry, KPI, Upgrade funding reporting) and analysis on On-Time Running (OTR), incidents, trends, causes and impacts for reporting Sydney Trains performance across business functions.
Strategic Alignment	Strategic
Change Description	The new richer REM data is available to enable Organisational, Compliance and Legislative reporting. Key considerations on incorporating the REM data into the Enterprise Incident Reference Model to enable normalising the data so it can then be provisioned out into data marts within the reporting layer. 
Change Impact	The ROC program has an **obligation** ensure existing business reporting is not impeded and **business opportunity** to drive reporting improvements thru further analysis during detailed design is required to understand business reporting continuity and business reporting requirements – **PS#3**

4.8.2 CIP/CIA/PIRT Incident Dash board

Description	The incident dashboard is a BI reporting solution built on Tableau dashboards. Sydney Trains provides the necessary data feeds to PwC via SFTP which is then transformed into a fact table and a number of views on top of this fact table. One of the views then consolidates the other views and is then exposed to Tableau. Visualizations have been prepared in Tableau to present the KPIs in a meaningful manner for GM stakeholders by displaying analytics of the historical incident information in order to better identify sources of disruption. The incident view provides overall statistics for incidents within a specific timeframe. The daily incident view has been designed to allow users to drill down on incidents on a daily level. Users are able to see the events which occurred on any given day, charted on a map as well as how the incident profile affected the day.
Strategic Alignment	Strategically Aligned
Change Description	CIP/CIA/PIRT Dashboard currently sources Incident data from the IIMS by the CIP team. To ensure business continuity reporting, incident information will need to be sourced from IMS.
Change Impact	The ROC program has an **obligation** ensure existing business reporting is not impeded and **business opportunity** to drive reporting improvements thru further analysis during detailed design is required to understand business reporting continuity and business reporting requirements – **PS#3**

4.8.3 Day 2 Day Intel (D2DI)

Description	The Day to Day Intel Solution is a bespoke BI solution that uses enterprise wide data from various internal and external data sources. The key features of the product are: • A full/complete Intel management & analysis capability. • A capability of linking & analysing historical 'threads' between Intel, improving effectiveness & speed in tracing of offenders. • A capability to capture multimedia Intel (e.g. CCTV), linking it to other Intel • A capability to generate, maintain and distribute Intel Briefs
Strategic Alignment	Strategically Aligned
Change Description	• The new REM system will capture Security incidents • Information interfaced with D2DI will depend on the requirements and timeliness of the criticality of the information.

	
Change Impact	The ROC program has an **obligation** ensure existing business reporting is not impeded and **business opportunity** to drive reporting improvements thru further analysis during detailed design is required to understand business reporting continuity and business reporting requirements – **PS#3**

4.8.4 Enterprise Data Warehouse (EDW)

Description	The EDW resides between the sourcing and delivery of business information. EDW has a number of database layers which help to integrate data into a common Sydney Trains enterprise view. The two layers in the EDW which help structure data in this way are the corporate information designed for long term storage and the reporting layers designed for rapid retrieval of data, as required by the business. The corporate information layer of the EDW is defined by the BI architecture framework in information domain structures. These information domains are fully persistent storage areas for Sydney Trains data in third normal form (3NF). Information from the corporate layer is sourced into multiple data marts within the reporting layer of the EDW. The reporting layer represents corporate data in dimensional structures for reporting purposes. The reporting layer provides a presentation service for BI report functionality. The reporting layer is the business gateway for viewing performance management data in the EDW.

Document Ownership Information

TRIM #: <Insert Trim # Here>

Capital Register ID	3141.02	
Program ID		

Sponsor	Howard Collins, Chief Executive	Sydney Trains

Sponsor's Delegate	Neil Brown, ROC Transformation Director	Customer Service
Program Director	Matt McInnes, ROC Program Director	Customer Service

Document Name and Version Control

(Circulated versions only)

Document Name & Location				
Version	**Date**	**Author**	**Partner**	**Reason for Issue / Changes Included**
0.01	28-Aug	James Horton & Bjoern Brunner	Ajilon & Frequentis	Draft Template
0.02	02-Sep	Bjoern Brunner	Frequentis	Draft content commenced
0.03	16-Sep	James Horton	Ajilon	Updated document structure - feedback received to align to PeFM Technical Solution Design template
0.04	18-Sep	Bjoern Brunner & James Horton	Frequentis & Ajilon	Further content added
1.0	18-Sep	Bjoern Brunner & James Horton	Frequentis & Ajilon	Released for ST review
1.01	27-Sep	Bjoern Brunner & James Horton	Frequentis & Ajilon	Added further content e.g. detail on SIRI Update based on ST feedback, and feedback review meeting with Linley 25-Sep
2.00	28-Sep	Bjoern Brunner & James Horton	Frequentis & Ajilon	Final preparation for release to ST
2.01	30-Sep	Bjoern Brunner & James Horton	Frequentis & Ajilon	Updates based on ST feedback 29 Sep, updated during review workshop 30 Sep attended by Linley, Bjoern, James, Guy, Shannon, Julian
3.00	30-Sep	Bjoern Brunner & James Horton	Frequentis & Ajilon	Final preparation for release to ST. Version that will be used for REM 2016.R1 functionality.

Table of Contents

1 Introduction

1.1 Document Purpose

This document defines the Technical Solution Design for ROC Release 1 – IMS. It includes the:

- High level systems and architecture overview to provide context of the technical solution design.
- Design considerations of the technical solution design, including assumptions and dependencies, decisions, constraints, patterns and principles, risks and issues.
- High level technical solution design of the Rail Emergency Management (REM) COTS product. Further detail will be captured in the ROC Release 1 – IMS Functional Specification, and will be referenced where appropriate. The technical solution design of REM is also shaped by the ROC Release 1 – IMS Product Gap Analysis and IMS Nun-Functional Design, referenced where appropriate.
- High level technical solution design of existing components that will be impacted by the functional and non-functional requirements of ROC Release 1 – IMS Detailed Technical Business Requirements, with references to the ROC Release 1 – IMS Solution Architecture document for context and architecture specification where appropriate.
- High level system integration design between REM and existing components that will be impacted by the requirements and specifications contained in the ROC Release 1 – IMS Solution Architecture document. Further detail will be captured in the ROC Release1 – IMS Integration Specification, and will be referenced where appropriate.
- High level environment architecture that will be impacted by the requirements and specifications contained in the ROC Release 1 – IMS Solution Architecture document. The system integration design is also shaped by the ROC Release 1 – IMS Future State Business Processes, as the business processes will shape the deployment requirements (number of instances, location of instances, end-user system access etc.) of the various new and existing systems, which has an influence on the environment architecture.

This document is intended to be used by the members of the ROC Release 1 project team who will implement and verify the correct functioning of the system. It will also be used by the ROC Release 1 program team to govern the implementation to ensure delivery meets agreed program outcomes.

The initial releases of this document will be based on the ROC Release 1 – IMS High Level Technical Business Requirements (HLTBR) document and the ROC Release 1 – IMS Project Concept and Review (PCAR) document.

This document will be further updated after the release of the key input documents, specifically the ROC Release 1 – IMS Detailed Technical Business Requirements (DTBR) document and the ROC Release 1 – IMS Solution Architecture document (SAD).

See section 1.1.1 below for further detail on the allocation of system function capability to the REM COTS product relating to the REM 2016.R1 release on 30-Apr-2016.

References to ROC Release 1 refer to the technical go-live date 1-Aug-2016.

References to ROC Release 3 refer to the technical go-live date 1-Nov-2016.

REM 2016.R1 will be available for ROC Release 1

REM 2016.R2 will be available for ROC Release 3

1.1.1 REM 2016.R1 Functionality

The initial releases of this document contain system functionality required as part of the REM 2016.R1 COTS product offering. Frequentis have a freeze on allocation of functionality to the REM 2016.R1 release on the 30 September 2015.

This document, along with additional detail in the ROC Release 1 – IMS Functional Specification document, and to a lesser extent the ROC Release 1 – IMS Integration Specification document, is

intended to provide sufficient information to inform the ROC Release 1 program team that the requirements in the HLTBR document will be met by the REM 2016.R1 release as appropriate.

Subsequent document versions will provide additional focus on functionality related to existing incident management systems and the existing systems integrated with existing incident management systems (see In Scope items)

The key sections of this document relating to REM 2016.R1 functionality are listed in the table below.

Section	Details
4.1 REM User Interface Design	This section simply references the ROC Release 1 - IMS Functional Specification document – the section required in this document to align to the PeFM TSD template.
4.2 REM Component Design	This section contains the high-level detail of the REM components within the REM COTS product suite. It has a reference to the Notification Module (inbound data) and the Data Integration Module (outbound data).
6 Integration/Interface Architecture	This section lists the key system integrations at a high-level required for ROC Release 1, showing which systems are likely to provide notifications to REM 2016.R1, which systems are likely to consume incident data from REM 2016.R1, which systems will report from the REM 2016.R1 Shadow DB, and which systems will interact with REM 2016.R1 components during usage.
6.4.1 SIRI	This subsection of the EDI Integration provides high-level detail of the outbound data in the SIRI format.
6.4.2. Notifications	This subsection of the EDI Integration provides high-level detail of the inbound notification data.
9 Packaging and Installation	This section provides detail of the REM technology requirements for each of the REM components, with the expectation that these will be provided by Sydney Trains.
11 Environment Architecture	This section provides high-level details of the various REM environments.

1.2 Scope and Requirements

This section to be updated following release of the Detailed Technical Business Requirements and the Solution Architecture document

The full list of scope and requirements that govern the technical solution design are defined in Section 1.3 'Scope' and Section 4 'Requirements' of the ROC Release 1 – IMS Solution Architecture document (SAD). Key scope items have been repeated below as necessary to assist with understanding context of this document.

1.2.1 In Scope

The following In Scope items have influenced the Technical Solution Design.

Scope Item	Details
ROC Release 1 Functionality required in the REM 2016.R1 release	The REM 2016.R1 COTS product will require customisation to support the requirements of Sydney Trains REM ROC Release 1, as detailed in the ROC Release 1 – IMS Product Gap Analysis (PGA) [5]. The major new functional items are bulleted below: • Notifications – Provides Notification handling for multiple source systems. • SIRI-SX – Provides publication of Incident Details in SIRI format to downstream systems.
Existing Incident Management Systems	Sydney Trains bespoke applications that provide incident management functionality (e.g. IIMS, SRS, IFMS, Lotus Notes (ICON)) that will be implemented in the REM COTS product

Scope Item	Details
Existing systems integrated with existing Incident Management Systems	Sydney Trains bespoke applications and COTS products that integrate with IIMS, SRS, IFMS or Lotus Notes (ICON). See section 6.0 for list of integrations

1.2.1.1 Systems Not Replaced or Integrated To for ROC Release 1

The following items were deemed in scope at the start of ROC Release 1 – IMS detailed design phase. However, meetings and workshops during the design phase have determined that the following items will not be replaced or integrated to for ROC Release 1.

Scope Item	Details
mFS	mFS does not currently integrate to an existing incident management system, and will not be integrated to REM COTS product during ROC Release 1
Lotus Notes (ICON)	Lotus Notes (ICON) will continue to be used in ROC Release 1, with a small number (TBA) of relevant RMC-related operational incidents to be manually dual-keyed into REM EMC.
IFMS	(TBC) IFMS will continue to be used in ROC Release 1, with a small number (TBA) of relevant RMC-related operational incidents to be manually dual-keyed into REM EMC.
Kronos	Kronos manages the actual time records of employees based on clock-on and clock-off operations at various office locations. This information is deemed to be not required to support Staff Rostering management within REM for ROC Release 1.
TCTime	Main functionality is the Timesheet functionality, not required to support Staff Rostering management within REM for ROC Release 1. Note: TCTime is still expected to be a down-stream consumer of the REM Shadow DB for reporting functionality, detailed design pending on the approach Sydney Trains wish to undertake relating to future state Incident Management reporting.

1.2.2 Out Of Scope

The following Out of Scope items have not been considered in the Technical Solution Design.

Scope Item	Details
DTTS integration	The integration with the DTTS system has been regarded an out of scope item for ROC Release 1.
CIMS integration	The integration with the CIMS system has been regarded an out of scope item for ROC Release 1.
CTI integration	Integration with Voice Communication systems (VCS) is regarded as an out of scope item for ROC Release 1.
Two way SMS integration	For ROC Release 1 one way (outgoing) SMS communication is supported by the Sydney Trains infrastructure. Two way SMS integration it is regarded as an out of scope item for ROC Release 1.
Voice Mail integration	Voice Mail integration it is regarded as an out of scope item for ROC Release 1.
REM iOS Mobile Client	The provision of an iOS version of the existing Android REM Mobile Client is not within scope of ROC Release 1. Existing Sydney Trains mobile applications will be leveraged where appropriate.

1.3 Solution Overview

REM is being implemented as the Incident Management System used in Sydney Trains, consolidating functionality existing in multiple existing incident management systems (e.g. IIMS, SRS, IFMS, SPAD). It will provide a single source of truth and single system approach to manage incidents within Sydney Trains. This will support the Sydney Trains ROC Program objectives in better incident management response and reduce customer journey times due to impacts on the Sydney Trains' railway network.

ROC Release 1 – IMS will involve REM being deployed in the Sydney Trains' system landscape, integrating with existing front office, back office and reporting systems, to support early transition to a new incident management system prior to the business implementing the new Rail Operations Centre (ROC).

1.4 Definitions, Acronyms and Abbreviations

The following definitions will be used in this document:

Acronym / Term	Definition
IMS	Incident Management System
REM	Rail Emergency Management
EMC	Emergency Management Client
DMC	Data Management Client
DTTS	Dynamic Time Tabling System
CIMS	Customer Information Management System

1.5 Related Documents

Ref	Document	Version
[1] HTLBR	ROC Release 1 – IMS High Level Technology Business Requirements	V1.1
[2] PCAR	ROC Release 1 – IMS Project Concept and Review	V2.3
[3] DTBR	ROC Release 1 – IMS Detailed Technology Business Requirements	To Be Released
[4] FSBP	ROC Release 1 – IMS Future State Business Processes	To Be Released
[5] PGA	ROC Release 1 – IMS Product Gap Analysis	V5.0
[6] SAD	ROC Release 1 – IMS Solution Architecture (document)	To Be Released
[7]	ROC Release 1 – IMS Functional Specification	TBC – V1.0
[8]	ROC Release 1 – IMS Integration Specification	TBC – V1.0
[9]	ROC Release 1 – IMS Non Functional Specification	TBC – V1.0
[10]	ROC Release 1 – IMS Data Technical Analysis Outputs	TBC – V1.0
[11]	ROC Release 1 – IMS Operational Model	TBC – V1.1

2.4 Application Usage Diagrams

TODO: Update this section following release of the ROC Release 1 – IMS Future State Business Processes, and create appropriate summary application usage diagram(s) from the Holocentric approved future state business processes that illustrate the relevant users and the system functions that they will invoke

Access rights to the REM Web Portal can be configured in the Roles and Rights management view of the REM DM.C.

Additionally the REM Web-Portal can be used to maintain the rostering information of Sydney Trains staff members. This is particular useful in case a team leader needs to update rostering information due to a sick crew member of his team. Data loaded from other rostering systems via ETL is not intended to be maintained in the REM WEB-Portal Standby Management Client.

4.2.6.2 ROC Release 1 REM 2016.R1 Customisations

There are no customisations to the existing REM Web Client for REM 2016.R1

4.3 Rules Engine

This section is not applicable for the REM product, a COTS product offering from Frequentis.

4.4 Object Model

This section is not applicable for the REM product, a COTS product offering from Frequentis.

- Sydney Trains 1-way SMS communication specification via the Telstra SMS Gateway

4.2.4 REM Data Management Client

4.2.4.1 Function

The REM DMC is used to configure the REM system with necessary configuration data, required to operate the system according to the agreed operational business processes. Usually this application is used by the Data Management power users who are represented by specially trained staff with operational business knowledge.

Additional information on the process, inputs and outputs, and error conditions of this system are detailed in the ROC Release 1 – IMS Functional Specification as appropriate.

4.2.4.2 ROC Release 1 REM 2016.R1 Customisations

The REM DMC will support:

- Configuration aspects relating to the Notification messages
- Configuration aspects relating to the Outbound Incident SIRI messages

4.2.5 REM EMC

4.2.5.1 Function

The REM EMC represents the software, used by the Incident Operator to create, manage and review incidents. It implements all REM functions required to support incident handling, based on the configurations undertaken within the Data Management Client.

New incident records can either be generated manually or based on notifications from external systems like (e.g.: mIIMS). In the REM EMC, notifications are displayed in the "Notification Overview".
Upon selection of a particular notification, a detail view provides the user with specific information depending on the alert source, e.g. a link to a video feed of CCTV cameras, GPS coordinates, a device ID, or incident details from other incident management systems.
Incoming notifications are displayed in a tray dialogue. The user can choose to dismiss the notification or create a new incident record with data provided from the alert source already prefilled. All notification handling and audit history is maintained and viewable. Displayed alerts, alert information and possible user actions, are tied to the product's user rights management.

4.2.5.2 ROC Release 1 REM 2016.R1 Customisations

The following high-level customisations will be implemented in the REM 2016.R1 release, to be available for ROC Release 1:

- Notification Management user interfaces e.g. Notification Overview
- Launching of the ST instance of the SmallWorld GIS Viewer within REM EMC with asset location support

Additional information on the system functionality of the REM EMC system (including user interfaces, processes, and handling of the inbound Notification messages) is detailed in the ROC Release 1 – IMS Functional Specification as appropriate.

4.2.6 REM Web Portal

4.2.6.1 Function

Different internal departments of Sydney Trains will be interested in incident information but do not actively contribute to the incident resolution or documentation. It is recommended that those users are provided with incident information using the (by design read-only) REM Web Portal.

Transport Sydney Trains

ROC Release 1 - IMS Architecture Specification
Rail Operations Centre Program

ROC Release 1 - IMS Architecture Specification	
Project or Program	Program
Version	3.0

3 Design Consideration

TODO: Update this entire section following release of the Detailed Technical Business Requirements and the Solution Architecture document

3.1 Design Assumptions and Dependencies

The following assumptions have been made when defining the technical solution design during the ST ROC Program Release 1 Detailed Design phase.

Ref#	Assumption	Impact if assumption invalid
IMS-ARC-AS-001	The scope and requirements to be captured and documented in the DTBR and SAD, that govern the technical solution design, will not introduce additional functional and non-functional requirements as determined from the PCAR, HLTBR, the APD workshops, and the COTS product vendor responses captured in the PGA.	• Required functionality may not be delivered in REM 2016.R1 release. • System Integration may not be able to compensate for identified functionality mismatches between REM and existing systems. • Future state system processes and business processes may be impacted
IMS-ARC-AS-002		

The following dependencies have been identified for the technical solution design during the ST ROC Program Release 1 Detailed Design phase.

Ref#	Dependency	Implication
IMS-ARC-DP-001	EAM program delivering TIBCO packages to isolate impact between IIMS and EAM-related systems such as FMBS etc that will be replaced by the EAM program	IIMS interfaces to TIBCO will remain unaltered. As such ROC can replace REM without impact to EAM program as long as system functionality of REM & TIBCO can mimic the presence of the IIMS system.
IMS-ARC-DP-002	TBC - EAM program delivering TIBCO packages to isolate impact between IFMS and EAM-related systems such as TEAMS3 etc. that will be replaced by the EAM program	TBC – IFMS interfaces to TIBCO will remain unaltered. As such ROC can replace REM without impact to EAM program as long as system functionality of REM & TIBCO can mimic the presence of the IFMS system.
IMS-ARC-DP-003	Design specification closure for REM release 2016.R1 is the 30th of September 2015.	Architectural design decisions which require functional enhancements, taken after specification closure, cannot be delivered for REM 2016.R1 release and will need to be considered for REM 2016.R2 release or later
IMS-ARC-DP-004	Provision by relevant ST data owners of Sydney Trains Master and Reference Data as required by REM COTS product (see ROC Release 1 – IMS Data Management Strategy) for use by ST ROC program	REM COTS product requires ST-specific master and reference data, to configure the system for use in the ST system environment. Single sources of truth for required master and reference data to be identified, and quality of data to be sufficient to allow REM COTS product to function correctly. System functions may be impacted with invalid master data e.g. being able to select correct location of incident, being able to view location of incident in SmallWorld GIS etc.

2 Systems and Architecture Overview

TODO: Update this entire section following release of the Detailed Technical Business Requirements and the Solution Architecture document

2.1 Solution Design Overview Diagram

The high level solution design overview diagram below provides business model context of the systems involved with the ROC Release 1 - IMS.

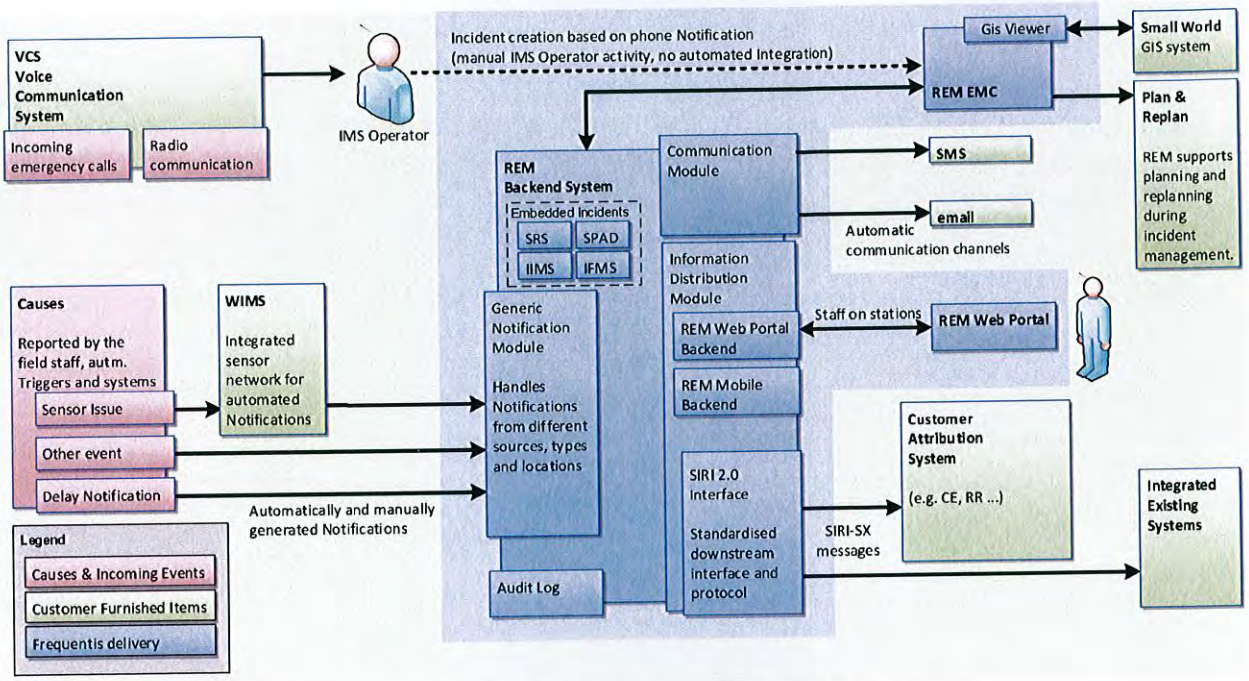


Figure 1: Solution Design Conceptual Overview

Please note: The decision whether WIMS will be integrated with REM to provide Notifications for the IMS Operator is still pending. The existing email notification process may remain, or alternative trigger system (e.g. BBTServer) may be integrated with REM (see section 6.0 for further details on system integration).

The Customer Attribution System relates to Sydney Train and third party attribution management systems that determine the appropriate attribution of an incident to the relevant party e.g. asset management systems providing defect analysis on a fleet fault may attribute incident to a particular stakeholder group.

2.2 Functions performed by the Systems

TODO: Update this section with list of high-level system functions of existing integrated systems relevant to ROC Release 1, following the release of this document focused on REM 2016.R1 functionality (see section 1.1.1).

2.3 Functions invoked by the User

TODO: Update this section following release of the ROC Release 1 – IMS Future State Business Processes, which will define the relevant users and the system functions that they will invoke

Ref#	Dependency	Implication
IMS-ARC-DP-005	Provision by ST (or ST ROC program delegates) of the following items: Small World GIS, Active Directory, Oracle Database for REM, and provision of the database mirror ("REM Shadow DB"), SMS (1-way for ROC Release 1 – Telstra SMS Gateway specification) and Email (SMTP) servers, TIBCO, and existing Sydney Trains systems to be integrated.	REM COTS product requires an application landscape to be provided by Sydney Trains, including core elements such as database servers, to be operational

3.2 Design Constraints

The following constraints have been taken into account for the technical solution design during the ST ROC Program Release 1 Detailed Design phase.

Ref#	Constraint	Solution Impact	Validated By
IMS-ARC-CS-001	The iOS-version of the existing Android REM Mobile Client offering is not available for ROC Release 1	Existing ST Mobility applications will be leveraged were possible, with the possibility of minor changes to handle the new Notification data type	Linley Kan
IMS-ARC-CS-002			

3.3 Architecture & Design Patterns

The following architecture and design patterns are proposed or implemented for ROC Release 1:

- Application / Data Integration
  - TIBCO will be used EAI
    - REM Incident Details will be Publish Subscribe based on user events detailed in the ROC Release 1 – IMS Functional Specification (e.g. save changes)
  - (TBC) will be used for ETL
    - ST Day of Operations Rostering Information will be loaded daily into REM
    - ETL jobs will be triggered by TIBCO managed events to ensure traceability of data integrations, and consolidation of logs with application integration
- Data Architecture
  - REM Shadow DB will be created as an Operational Data Store
    - Reporting (e.g. near-real time reporting, operational and business intelligence) will be managed as extracts from the REM Shadow DB to isolate the REM Server database from any system performance impacts due to computationally intensive queries
    - Recommended that business views are created across the REM Shadow DB to isolate reporting data extracts from configuration changes relating the static and dynamic chapter configuration possible within the REM.

3.4 Design Risks and Issues

The following risks have been identified for the technical solution design during the ST ROC Program Release 1 Detailed Design phase.

Ref#	Description	Consequence	Consequence Rating	Likelihood Rating	Risk Rating	Mitigation
IMS-ARC-RK-001	Parallel EAM implementation	System integration issues impact ROC Release 1 go-live date	TBA	TBA	TBA	EAM-ROC technical working group established
IMS-ARC-RK-002						

The following issues have been identified for the technical solution design during the ST ROC Program Release 1 Detailed Design phase.

Ref#	Description	Assigned To	Target Resolution Date
IMS-ARC-IS-001			
IMS-ARC-IS-002			
IMS-ARC-IS-003			

4 Application Architecture

The Incident Management System will be implemented with the REM product. REM offers multiple configuration options which allow the implementation of customer specific business processes and documentation options. The REM provided configuration options allow the implementation of business processes according to Best Practice in Europe. Configuration options which deviate from the COTS product functionality in a way that they need to be specifically implemented for Sydney Trains are regarded a customisation.

TODO: Update this section with application architecture impacts of existing integrated systems relevant to ROC Release 1, following the release of the version of this document that focuses on REM 2016.R1 functionality (see section 1.1.1).

4.1 REM User Interface Design

The REM user interface design is detailed in the ROC Release 1 – IMS Functional Specification [7].

4.2 REM Component Design

The following chapter shall provide an overview of the internal architecture of the IMS system and its components.

The IMS system consists of the components illustrated below. The arrows between the system mark information exchange between the components.

Further detail on system integration with applications that are not part of the REM COTS product suite are detailed in section 6.

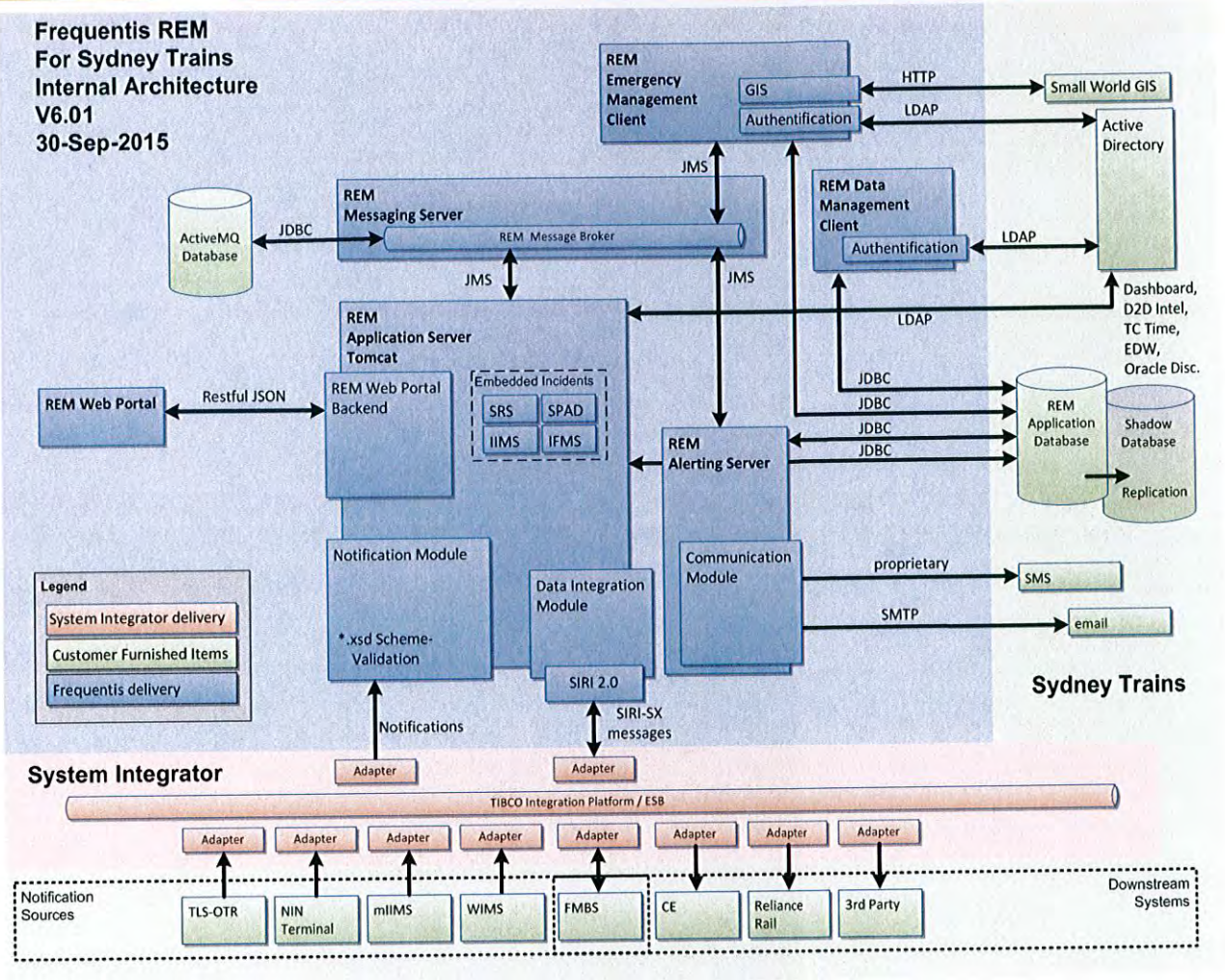


Figure 2: Internal IMS Architecture for ROC Release 1

Assumption

Please be aware, that the picture above reflects the architecture for the ROC Release 1. Future ROC Releases might require additional integration to additional systems currently not depicted within the above scheme. It is assumed, that the following list of systems will be provided by Sydney Trains:

- Small World GIS,
- Active Directory,
- Database, and database mirror ("Shadow Database"),
- SMS (1-way for ROC Release 1 – Telstra SMS Gateway specification) and Email (SMTP) servers,
- the TIBCO layer and the required adapters,
- the sum of all existing Sydney Trains systems to be integrated.

4.2.1 REM Application Server

4.2.1.1 Function

The REM Application Server hosts several modules, used for integration and information exchange:

- The REM Web Portal Backend allows access to incident data through the REM Web Portal. A list of incidents, incident details of specific incidents can be requested. Additionally, the REM Web

Portal provides access to the rostering information in order to perform modifications to the shift schedule.

- The Notification Module is the receiving part of the IMS system regarding Notifications issues through terminals or automatically by distributed sensors and systems.
- The Data Integration Module handles information distribution to downstream systems as well as providing data to real time information such as freight train information or train set composition.

The REM Application Server supports horizontal scaling when set up and deployed in a load balanced environment.

Additional high-level detail on the on the inbound Notification module and the outbound SIRI messages are detailed in section 6.4 below.

4.2.1.2 ROC Release 1 REM 2016.R1 Customisations

The following high-level customisations will be implemented in the REM 2016.R1 release, to be available for ROC Release 1:

- Support for inbound Notification messages
- Support for outbound Incident publication messages in SIRI format

4.2.2 REM Messaging Server

4.2.2.1 Function

The Messaging Server provides a Java Message Queue (JMS) Message Broker for the internal communication between REM system components. The REM EMC, the REM Alerting Server and the REM Application Server exchange information with each other by utilising the REM Messaging Server JMS.

4.2.2.2 ROC Release 1 REM 2016.R1 Customisations

The Messaging Server will support the messages between REM EMC and REM Application Server relating to:

- Notification messages
- Incident publication messages

4.2.3 REM Alerting Server

4.2.3.1 Function

The REM Alerting Server is used to publish alerting messages, such as SMS text messages to crew members and Sydney Trains staff.

Email integration follows a standard SMTP protocol while SMS and Voice Mail integration usually follows a proprietary integration approach.

The SMS integration will implement the proprietary Telstra SMS Gateway 1-way SMS specification.

Note: Voice Mail integration is out of scope for ROC Release 1.

Additional detail on the relevant integrations will be detailed in the ROC Release 1 – IMS Integration Specification as appropriate.

4.2.3.2 ROC Release 1 REM 2016.R1 Customisations

The REM Alerting Server will support:

5 Database / Information Architecture

TODO: Update this entire section as required following release of the Detailed Technical Business Requirements and the Solution Architecture document

5.1 Data Model

TODO: Update this section with high-level data model relevant to ROC Release 1, following the release of the version of this document that focuses on REM 2016.R1 functionality (see section 1.1.1).

5.2 Tables

This section is not applicable for the REM product, a COTS product offering from Frequentis.

5.3 Reporting Solution

It is recommended to implement a shadow database which mirrors the productive DB to provide an operational data store or report server, to be known as the REM Shadow DB. This will enable Sydney Trains to perform Data Mining and statistical analysis on the REM Shadow DB and create reports from it, without impacting the system performance of the REM COTS product suite.

Please refer to the REM Internal Architecture diagram in section 4.2 for an illustration regarding the implementation of such a shadow database as a mirror of the IMS Application Database. For mirroring the data, the user of standard COTS products such as Oracle Data Guard can be used. These are transparent to the REM product and do not need to be integrated specifically. The utilisation of the data mirroring tool must not influence the performance of the operational IMS application database.

Please note, that the shadow database shall be implemented as a read only database only, in order to ensure the integrity of the data.

In order to enable Sydney Trains creating their own reports based on shadow database data extractions, Frequentis can offer workshops for the BI department and support. The details about such agreements shall be defined within the implementation contract or as part of a separate training and support contract.

A number of system integrations can be addressed via extracts from the REM Shadow DB, including but not limited to:

- EDW BI incident details data
- TLS-OTR incident summary data
- PMS incident details data
- Oracle Discover ad-hoc reporting
- CIP/CIA/PIRT Dashboard
- TCTime incident details data

5.4 Reference Data Requirements

This section will reference the relevant detail in the ROC Release 1 – IMS Data Management Strategy document and the ROC Release 1 – IMS Data Technical Analysis Outputs document.

TODO

- Tabulate the systems that will be using the same reference data in order to be able to integrate successfully. Input from Sydney Trains required.

Category	Existing Source	Existing Target	Release Source	Release Target	Recommended Solution for Identified Gap	Assumptions
1-Front	mIIMS	IIMS	mIIMS	REM	Gap – Persons of Interest data captured in mIIMS cannot be supported within the Notification from mIIMS to REM Manual entry of Persons of Interest data into the dynamic REM chapter	OPTION FOR RELEASE 3 – REM Supports the Sydney Trains Persons of Interest data set and will pre-populate the Incident record with the Notification data related to POI
1-Front	NIN Portal	IIMS	NIN Portal	REM	New TIBCO integration, convert NIN Portal incident to REM notification, there will be no return of Notification ID, New REM Notification web service, Notification ID will NOT be provided back to NIN Portal	NIN Portal system will work, or can be suitably modified by ST application owner with ROC Release 1 timeframes to work, without receiving a Notification ID, No impact to existing Business Processes OPTION Release 1 – Return Notification ID
1-Front	NIN Portal	IIMS	mIIMS	REM	Gap – Persons of Interest data captured in mIIMS cannot be supported within the Notification from NIN to REM Manual entry of Persons of Interest data into the dynamic REM chapter	OPTION FOR RELEASE 3 – REM Supports the Sydney Trains Persons of Interest data set and will pre-populate the Incident record with the Notification data related to POI
1-Front	mIIMS	IIMS	mIIMS	REM	New TIBCO integration, convert mIIMS delay to REM notification, there will be no return of Notification ID, New REM Notification web service, Alter mIIMS to handle no return of Notification ID	system will work, or can be suitably modified by ST application owner with ROC Release 1 timeframes, without receiving a Notification ID as a response to the delay object sent to REM, mIIMS system can be altered, No impact to existing Business Processes
1-Front	WIMS	N/A	WIMS	REM	New TIBCO integration to transform WIMS email alerts into REM notification, New REM notification web service **NOTE: THIS INTEGRATION WILL NOT REPLACE THE EXISTING SAFETY RELATED ACTION BY THE SIGNALLER AND THE VOICE COMMUNICATION BETWEEN SIGNALLER AND TRAIN CONTROLLER REGARDING A STOPPED TRAIN BASED ON WAYSIDE ALARMS**	This will be a non-real time interface for notifications, with first response to wayside alarm or alert handled by OT systems prior to REM involvement, WIMS will not send false alarms OPTION FOR RELEASE 1 – Integrate with BBTServer as near-real time
1-Front	TLS-OTR	IIMS	TLS-OTR	REM	New TIBCO integration to transform TLS-OTR delay notifications into REM notification, New REM notification web service	OPTION FOR RELEASE 1 – Manual tracking of TLS-OTR delays and manual raising of incidents in REM without a prior Notification
2-Back	IIMS	CE	REM	CE	New TIBCO integration, convert SIRI to IIMS format to replicate IIMS through existing TIBCO integration, TIBCO will enrich message with Car and Set details based on trip number entered by user, Requires REM incident publication functionality NOTE: Business Process impact	OPTION FOR RELEASE 1 - Business manually enter Car number & Set number, Waratah fleet can be identified with information collected against the incident, OPTION FOR RELEASE 3 - DTTS will supply this information to REM
2-Back	SRS	D2DI	REM	D2DI	New TIBCO integration, converts REM SIRI format incident details publication into D2DI database table insert, event based, near-real time as an improvement over existing 30 min wait for user to continue processing in D2DI due to existing batch process, Requires REM incident publication functionality	D2DI gracefully handles either overwritten incident details or has ability to store multiple messages with updated incident details for the same incident, OPTION FOR RELEASE 1 – Data Integration between REM Shadow DB at 30 min intervals

Category	Existing Source	Existing Target	Release Source	Release Target	Recommended Solution for Identified Gap	Assumptions
2-Back	SRS	D2DI	REM	D2DI	REM Configuration to support "Involved People" and free text entry of required fields.	OPTION FOR RELEASE 3 – REM Supports Sydney Trains Persons of Interest data set OPTION FOR RELEASE 1 - Required Persons of Interest data manually entered into D2DI
2-Back	IIMS	FMBS	REM	FMBS	New TIBCO integration, convert SIRI to IIMS format to replicate IIMS through existing TIBCO integration, TIBCO to enrich message via calls to TLS and Ellipse to get the Car and Set data, filter for Fleet incidents, Requires REM incident publication functionality NOTE: Business Process impact	Business will NOT need to manually enter Car number & Set number and they will NOT need to see this data in REM, OPTION FOR RELEASE 3 - DTTS will supply this information to REM
2-Back	IIMS	RR B2B Gateway	REM	RR B2B Gateway	New TIBCO integration, convert SIRI to IIMS format to replicate IIMS through existing TIBCO integration, TIBCO to enrich message via calls to TLS and Ellipse to get the Car and Set data, filter for Fleet incidents, Requires REM incident publication functionality NOTE: Business Process impact	Business will NOT need to manually enter Car number & Set number and they will NOT need to see this data in REM, OPTION FOR RELEASE 3 - DTTS will supply this information to REM
2-Back	IIMS	SKMS FPe	REM	SKMS FPe	New TIBCO integration, convert SIRI to FPe format, filter for SPAD incidents, Requires REM incident publication functionality	SPAD incidents to be handled in REM
2-Back	N/A	Transport Third Parties Systems (TBD)	REM	Transport Third Parties Systems (TBD)	New TIBCO integration to route to specified Third Party systems (TBD) that will provide a SIRI web service that TIBCO can publish into, Requires REM incident publication functionality in SIRI format	Third Parties Systems will only need to know about incidents being created and updated from the time their systems are up, OPTION FOR RELEASE 1 - authorised Third Parties Users could access the REM Web Client through a DMZ to include details for incidents not published into their system, ST will create appropriate secure access as required OPTION FOR RELEASE 1 – Creation of TIBCO adaptors to meet Third Party System specifications (TBC when set of Third Party Systems have been identified in the SAD.
2-Back	N/A	N/A	REM	SmallWorld GIS Viewer	New REM integration to construct required HTTP URL, Existing REM embedded web browser to launch (remote invoke) SmallWorld GIS Viewer with attributed (asset ID or location, zoom level) URL	Asset ID to GIS lat / long ID mapping exists and will be provided to either SmallWorld or REM, Only two URL formats are required to launch GIS Viewer, with either asset ID (and SmallWorld GIS viewer can resolve to lat/long) or asset lat/long (stored in REM as Master Data against an asset), and initial zoom level. Note that initial zoom level is NOT user configurable through REM EMC, Configuration of REM users will align with configuration of GIS users to allow for GIS Viewer applet to authorise use of tool
2-Back	RR B2B Gateway	IIMS & Documentum	RR B2B Gateway	REM & Documentum	New TIBCO integration to pick up RR B2B Gateway post Documentum links created and create shortcuts will be created in the Network Folder associated with the incident when the Notification is linked to the existing Incident with REM EMC incident document storage	Documents from RR need to remain in Documentum, Documentum Document links can be launched from embedded File Explorer component within REM EMC

Category	Existing Source	Existing Target	Release Source	Release Target	Recommended Solution for Identified Gap	Assumptions
3-Reports	TBC	TLS-OTR	REM Shadow DB	TLS-OTR	New TIBCO integration, retrieve required dataset using database adaptor and provide to TLS-OTR, either to web service or using database, or replicate a request-response from TLS-OTR as required	TIBCO can handle frequency and dataset retrieval without impacting performance of TIBCO server and related systems
3-Reports	N/A	Oracle Discovery	REM Shadow DB	Oracle Discovery	TBD	Existing extract TBD, Future requirements can be met with REM Shadow DB
3-Reports	TBC	CIP/CIA/PIRT Dashboard	REM Shadow DB	CIP/CIA/PIRT Dashboard	New TIBCO integration, retrieve required dataset using database adaptor and provide to CIP/CIA/PIRT Dashboard, either to web service or using database, or replicate a request-response from dashboard as required	TIBCO can handle frequency and dataset retrieval without impacting performance of TIBCO server and related systems, OPTION FOR RELEASE 1 - existing REM Web Client web service may provide a suitable dataset for reporting requirements
3-Reports	IIMS	TCTime	REM Shadow DB	TCTime	New dataset extract from REM Shadow DB to replace existing extract from IIMS, TIBCO could be used to trigger extract	Existing extract from IIMS TBD, Future requirements can be met with REM Shadow DB
4-Master	Ellipse	SRS	Ellipse	REM	Gap - There will be no **automated** Data Integration between Ellipse and REM TBC – Is this information also used by SRS for authentication or authorisation?	Contacts Master Data will be manually entered using the REM Data Management Client (DMC), initial bulk import by system administrator is possible
5-Manual	Lotus Notes	N/A	Lotus Notes	REM	Configuration of data field to hold Lotus Notes (ICON) incident number, manual data entry i.e. no system integration	REM is not replacing Lotus Notes (ICON) Incident Management functionality in ROC Release 1, manual entry of ICON incident ID, User of REM EMC has access to Lotus Notes where required to manually lookup ICON incident ID and manually populate into REM EMC

The following integrations will not occur for ROC Release 1 – IMS.

Category	Existing Source	Existing Target	Release Source	Release Target	Recommended Solution for Identified Gap	Assumptions
6-Not Integrated	mFS	FMBS	mFS	FMBS	No Change, no involvement with REM	mFS does not raise incidents, Existing FMBS system process will raise notifications from FMBS to REM
6-Not Integrated	Kronos	N/A	Kronos	N/A	No Gap	Kronos will not be integrated with REM in ROC Release 1 as REM does not require Staff Timesheet Actuals for ROC Release 1 functionality
6-Not Integrated	TCTime	N/A	TCTime	N/A	No Gap	TCTime will not be integrated with REM in ROC Release 1 as REM does not require the staff time sheet details for ROC Release 1 functionality
6-Not Integrated	N/A	IFMS	N/A	REM	TBC – No Gap If IFMS functionality replaced by REM then the following is required: REM provides configuration options in order to configure dynamic chapters for information capturing regarding IFMS incidents.	**IF IFMS is replaced by REM in ROC Release 1 then,** The current REM configuration options allow the implementation of IFMS incident management. Note: The implementation of additional configuration options aside the provided COTS offering is regarded a customisation.

Category	Existing Source	Existing Target	Release Source	Release Target	Recommended Solution for Identified Gap	Assumptions
6-Not Integrated	IFMS	TEAM3	IFMS	TEAMS3	TBC – No Gap If IFMS functionality replaced by REM then the following is required: New TIBCO integration, convert the TEAMS3 incident list request response (formerly to IFMS) to the format supported by existing REM Server incident details web service Note: Integration may not be required following investigation of dual key option between IFMS and REM.	**IF IFMS is replaced by REM in ROC Release 1 then,** Existing REM Incident Details web service (used by REM Web Client) is suitable to meet TEAM3-IFMS specifications, No impact to TEAM3 business processes, OPTION FOR RELEASE 1 - TEAMS3 User can use the REM Web Client
6-Not Integrated	IFMS	TEAM3	IFMS	TEAMS3	TBC – No Gap If IFMS functionality replaced by REM then the following is required: New TIBCO integration, convert the TEAMS3 incident list request response (formerly to IFMS) to the format supported by existing REM Server list incidents web service Note: Integration may not be required following investigation of dual key option between IFMS and REM	**IF IFMS is replaced by REM in ROC Release 1 then,** Existing REM List Incidents web service (used by REM Web Client) is suitable to meet TEAM3-IFMS specifications, No impact to TEAM3 business processes, OPTION FOR RELEASE 1 - TEAMS3 User can use the REM Web Client OPTION FOR RELEASE 1 – Dual Key (TBC)
6-Not Integrated	TEAMS3	IFMS	TEAMS3	IFMS	TBC – No Gap If IFMS functionality replaced by REM then the following is required: REM will store a manually entered defect ID that the user can cut-and-paste into TEAMS3 to view defect details (note, existing is IFMS asks TEAMS3 if it knows about an incident and if so then TEAMS3 return the defects and defect details of the linked asset in TEAMS3 through to IFMS via system integration) Note: Integration may not be required following investigation of dual key option between IFMS and REM	**IF IFMS is replaced by REM in ROC Release 1 then,** Infrastructure Incident Manager has access to TEAMS3 on same desktop as REM EMC, No impact to business processes OPTION FOR RELEASE 1 – Dual Key (TBC)
6-Not Integrated	FARS	N/A	FARS	N/A	No Gap Note: TBC - New configuration of data field to hold Train Consist data if required, manual data entry i.e. no system integration Note: The existing IIMS Car and Set fields are assumed not to be required in REM. Therefore there are no fields to be populated via a manual lookup using FARS. For further information see integrations relating to REM to FMBS, RR, CE, TLS, Ellipse in the table above.	IF FARS is required to provide Train Consist information, User of REM EMC has access to FARS where required to manually lookup Train Consist data and manually populate into REM EMC OPTION FOR RELEASE 3 - DTTS will provide this information to REM

6.1 Application Integration

Summarise the application integration i.e, those integrations that will utilise middleware messaging, perhaps utilising a common messaging model and / or common object model.

TODO: Create Application Integration Overview Diagram focussed on application integration, or reference the ROC Release 1 – IMS Integration Specification.

6.1.1 Web Services

This detail is available in the ROC Release 1 – IMS Integration Specification.

TODO: Insert reference to the ROC Release 1 – IMS Integration Specification.

6.2 B2B Integration

Summarise the B2B integration i.e, those integrations that go external to ST enterprise boundaries.

- *Reliance Rail B2B Gateway*
- *Telstra SMS Gateway*

TODO: Create B2B Integration Overview Diagram focussed on B2B integration, or reference the ROC Release 1 – IMS Integration Specification.

6.3 Data Integration

Summarise the data integration i.e, those integrations that will database ETL tools or similar to exchange data between systems. Note: the data integrations can leverage TIBCO as the orchestration mechanism as required.

TODO: Create Data Integration Overview Diagram focussed on data integration, or reference the ROC Release 1 – IMS Integration Specification.

6.4 EDI Integration

This chapter contains information regarding the electronic data interchange integration of the REM product with existing Sydney Trains applications. The EDI integration includes:

- An implementation of SIRI for outbound publication of REM incident messages
- Inbound REM Notification messages
- SMTP for sending emails from REM
- SMS (1-way Telstra SMS Gateway) for sending SMS from REM

The chapter provides further detail on the REM specific EDI integrations of SIRI and Notifications.

6.4.1 SIRI

This chapter shall describe the SIRI integration by providing a high level overview of the planned architecture for distributing information to the existing systems, to be part of the REM 2016.R1 release.

6.4.1.1 Working Principle

The REM Application server supports a SIRI Interface for downstream communication of incident details. The SIRI – TIBCO Adapter provided by the System Integrator acts as a master-client for all other customer systems. It will be the only client subscribing directly to the REM SIRI interface.

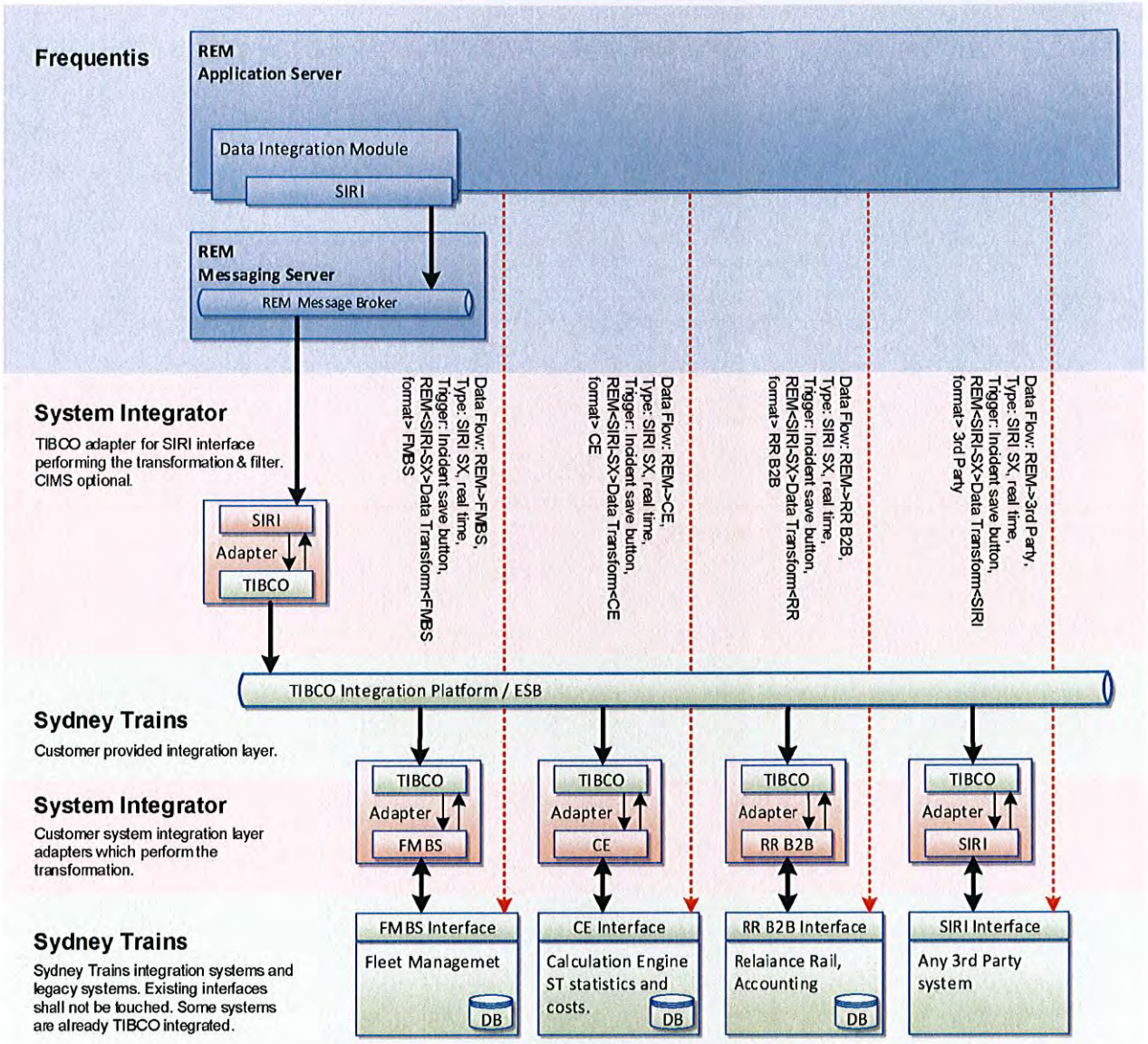


Figure 4: High Level SIRI integration scheme

Note: The double arrows between the existing Sydney Trains applications and TIBCO system adaptors represent possible request / response messages, not indicating the direction of information flow, which in this instance are outbound incident details from REM.

6.4.1.2 Encryption

Frequentis will deploy the REM specific information exchange implementation onto an Apache Active MQ system, provided as a CSI.

Apache Active MQ provides two layers of security: an SSL/TLS security layer, which can authenticate the broker to its clients, encrypt messages, and guarantee message integrity, and a JAAS security layer, which can authenticate clients to the broker.

The standard deployment of REM does not foresee encryption and authentication, as it is assumed that all communication is held within the customer's infrastructure premises. In case encryption is needed then authentication can be enabled for the communication between the REM Messaging Server and the TIBCO adapter.

Performance impact analysis needs to be undertaken in order to mitigate any issues caused by the encryption feature early on.

Category	Existing Source	Existing Target	Release Source	Release Target	Recommended Solution for Identified Gap	Assumptions
2-Back	MicRoster	N/A	MicRoster	REM	TBC - New periodic (e.g. roster update cycle) bulk import of Staff Roster by system administrator, existing REM functionality for maintaining roster on the day, TIBCO could be used to trigger ETL-tool job	Day of Operations staff rostering changes will be dual keyed into MicRoster and REM, Existing REM Web Client is suitable for maintaining REM copy of ST staff roster
2-Back	OpCrew	N/A	OpCrew	REM	TBC - New periodic (e.g. roster update cycle) bulk import of Staff Roster by system administrator, existing REM functionality for maintaining roster on the day, TIBCO could be used to trigger ETL-tool job	Day of Operations staff rostering changes will be dual keyed into OpCrew and REM, Existing REM Web Client is suitable for maintaining REM copy of ST staff roster
2-Back	N/A	Telstra SMS Gateway	REM	Telstra SMS Gateway	Configuration of REM for 1-way outbound SMS communication with Telstra SMS Gateway	ST handles the secure access to the SMS provider e.g. Firewall and DMZ provisioning and configuration
2-Back	N/A	SMTP Server	REM	SMTP Server	No Gap, existing REM functionality, configuration of existing Master Data Note: CIU (Customer Information Unit) may be provided emails of incidents from REM until CIMS is available on the application landscape.	ROC Release 1 only requires 1-way (outbound) email communication
2-Back	N/A	SharePoint	REM	SharePoint	No Gap Note: SharePoint in this integration refers to accessing SOPHIA and/or ACJP documents	All document repositories can be accessed using the existing REM embedded File Explorer component - acts like Microsoft Explorer. The network folder must be accessible from the REM EMC. REM does not support any SharePoint DMS-protocols.
2-Back	IIMS	Documentum	REM	Documentum	No Gap	All document repositories can be accessed using the existing REM embedded File Explorer component - acts like Microsoft Explorer. The network folder must be accessible from the REM EMC. REM does not support any SharePoint DMS-protocols.
2-Back	IIMS	AD	REM	AD	No Gap, existing REM functionality, configuration of existing Master Data	REM does not retrieve any user role / group information from AD, dependent on user authorisation Master Data configured in REM
2-Back	TLS	IIMS	N/A	REM	Gap - REM does not retrieve Car Number	Business will NOT need to manually enter Car number & Set number and they will NOT need to see this data in REM, OPTION FOR RELEASE 3 - DTTS will supply this information to REM OPTION FOR RELEASE 1 - REM can be configured to support manual entry of Car Number if required
2-Back	Ellipse	IIMS	N/A	REM	Gap - REM does not retrieve Set Number	Business will NOT need to manually enter Car number & Set number and they will NOT need to see this data in REM, OPTION FOR RELEASE 3 - DTTS will supply this information to REM OPTION FOR RELEASE 1 - REM can be configured to support manual entry of Set Number if required
3-Report	N/A	N/A	REM	REM Shadow DB	Creation of REM Shadow DB to provide operational data server reporting capability	Existing Oracle database replication tools (e.g. Data Guard) available and licenced
3-Report	TBC	EDW	REM Shadow DB	EDW	New ETL-tool dataset extract from REM Shadow DB to replace existing extract from IIMS, TIBCO could be used to trigger ETL-tool job	Existing extract from IIMS TBD, Future requirements can be met with REM Shadow DB

The following section details the integration architecture, indicating the required integration of each new and existing system considered within the ROC Release 1 – IMS scope.

The system integrations considered within the technical solution design have been grouped into the following categories.

Category	Description
1-Front	These integrations are typically providing notification of a potential incident through to the REM application server for display on the REM EMC and handling by the REM Incident Operator
2-Back	These integrations are typically those involved during the in-progress management of the incident and associated systems that made detail with related aspects e.g. fleet and infrastructure that may be involved in an incident
3-Reports	The integrations are typically those involved that provide operational or managerial or enterprise reporting, at various time horizons of the incident lifecycle and day of operations
4-Master	The integrations are typically those involved with provisioning
5-Manual	The integrations are typically those where the movement of information between systems must be manually performed by user(s) of both systems

In addition there are a number of systems that were considered for integration, but were deemed not necessary to integrate with for ROC Release 1.

Category	Description
6-Not Integrated	The integrations are not deemed to require integration with REM, but were considered during the technical solution design as the systems involved were in scope for analysis.

The following table lists the system integrations considered for ROC Release 1. Any indication of a gap in REM functionality relates to current state processes rather than the future state processes.

Category	Existing Source	Existing Target	Release Source	Release Target	Recommended Solution for Identified Gap	Assumptions
1-Front	FMBS	IIMS	FMBS	REM	New TIBCO integration, convert FMBS incident to REM notification, there will be no return of Notification ID, New REM Notification web service, Alter FMBS to handle no return of Incident ID	FMBS system will work, or can be suitably modified by ST application owner with ROC Release 1 timeframes, without receiving a Notification ID, No impact to existing Business Processes OPTION Release 1 – Return Notification ID
1-Front	mIIMS	IIMS	mIIMS	REM	New TIBCO integration, convert mIIMS incident to REM notification, there will be no return of Notification ID, New REM Notification web service, Notification ID will NOT be provided back to mIIMS	mIIMS system will work, or can be suitably modified by ST application owner with ROC Release 1 timeframes, without receiving a Notification ID, Existing mIIMS system can be altered, No impact to existing Business Processes TBC OPTION Release 1 – Return Notification ID from REM can be supplied back mIIMS

5.5 Master Data Requirements

This section will reference the relevant detail in the ROC Release 1 – IMS Data Management Strategy document and the ROC Release 1 – IMS Data Technical Analysis Outputs document.

TODO

- Tabulate the systems that will be using the same master data in order to be able to integrate successfully. Input from Sydney Trains required.

5.6 Transactional Data

TODO

- Tabulate the source owner and consumer systems of transactional data that illustrates what integration is required. Input from Sydney Trains required.

5.6.1 Archiving and Purging

The transactional data will accrue in the REM Application Database. Periodic purging of this transactional data will be required by a suitably qualified ST REM system administrator to maintain the operational performance of the IMS Application Database. Frequentis can provide relevant training as appropriate.

5.6.2 Disaster Recovery

The required disaster recovery processes are still to be defined.

However, it is expected that standard ST database management practices will be implemented to ensure backups and DR replication of the REM Application Database occur in line with specified business RTO and RPO requirements (assumed to be defined as non-functional requirements in the DTBR document [3]).

6 Integration/Interface Architecture

TODO: Update this section with integration architecture of existing integrated systems relevant to ROC Release 1, following the release of the version of this document that focuses on REM 2016.R1 functionality (see section 1.1.1).

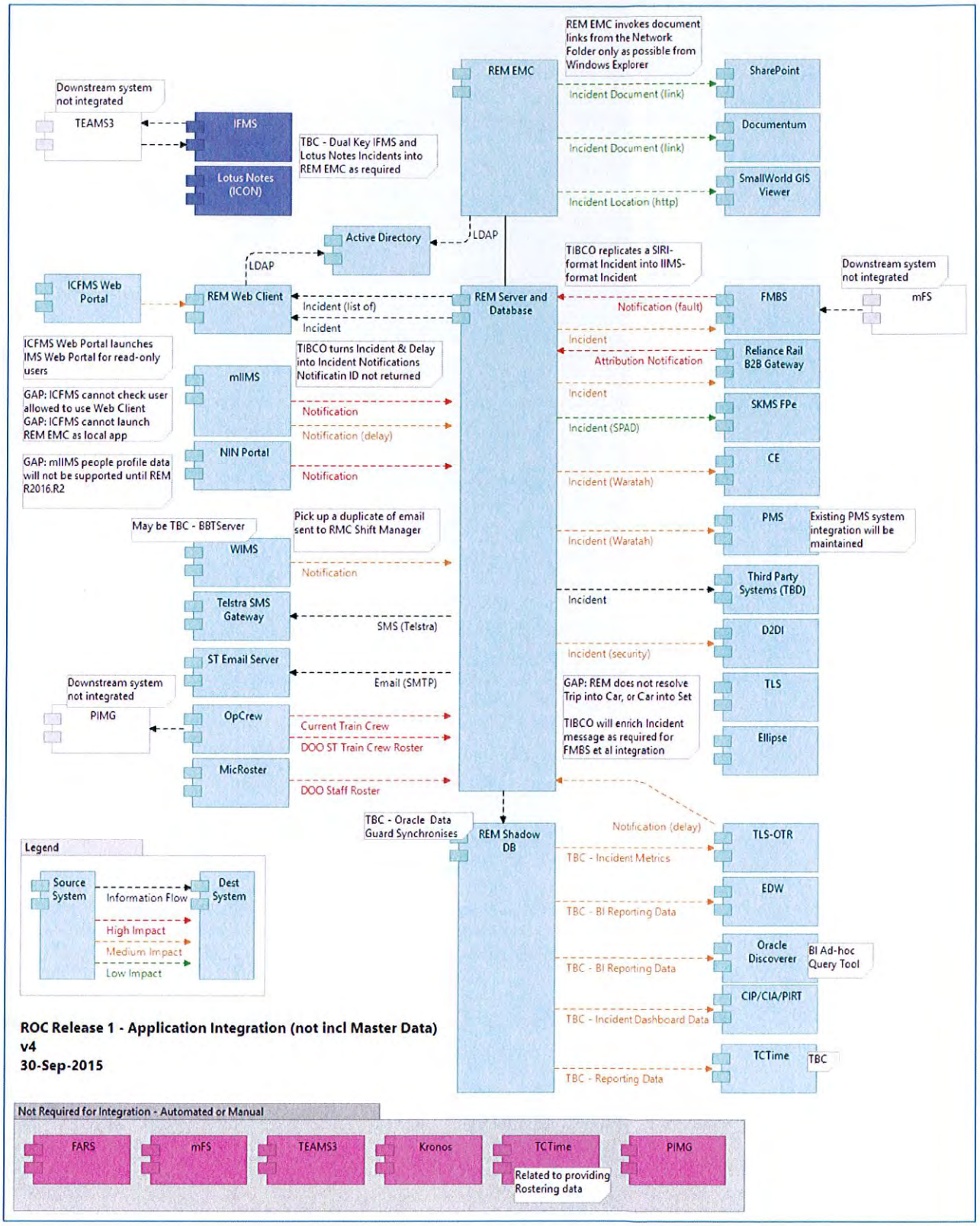


Figure 3: System Integration Overview

7 Libraries, Products and Tools

TODO: Update this section with application architecture impacts of existing integrated systems relevant to ROC Release 1, following the release of the version of this document that focuses on REM 2016.R1 functionality (see section 1.1.1).

Detail the artefacts used for development and execution e.g. Silverlight for SmallWorld GIS Viewer.

Add a reference to the ROC Release 1 – IMS Non-Functional Design document to see what each software services each system requires.

6.4.2.3 Data Format

The Web Service interface specification for Notifications will be provided by Frequentis as part of the REM product. Notification clients issuing notifications to REM have to be compliant to this interface specification.

6.4.2.4 Configuration

The following configuration options will be available for Notifications:

- Sources
- Default Notification category (which will be used in case no category is provided by the Notification source)
- Notification Visibility according to
    - Derived incident type
    - Area/location the notification is relating to

6.4.1.3 Data Format

REM implements the SIRI standard as a standardised information exchange format wherever possible. The implementation will focus on the SIRI-SX (Situation Exchange) format, with a specific characteristic of the "PtSituation" element.

Configurable REM incident chapters and other information currently not foreseen within the standard SIRI-SX data format will be handled as extension to the "PtSituation" element.

A description of the detailed data fields and mappings to REM information will be provided in a later version of this document.

6.4.2 Notifications

This chapter shall describe the Notification integration by providing a high level overview of the planned architecture for receiving structured information from the existing systems, to be part of the REM 2016.R1 release.

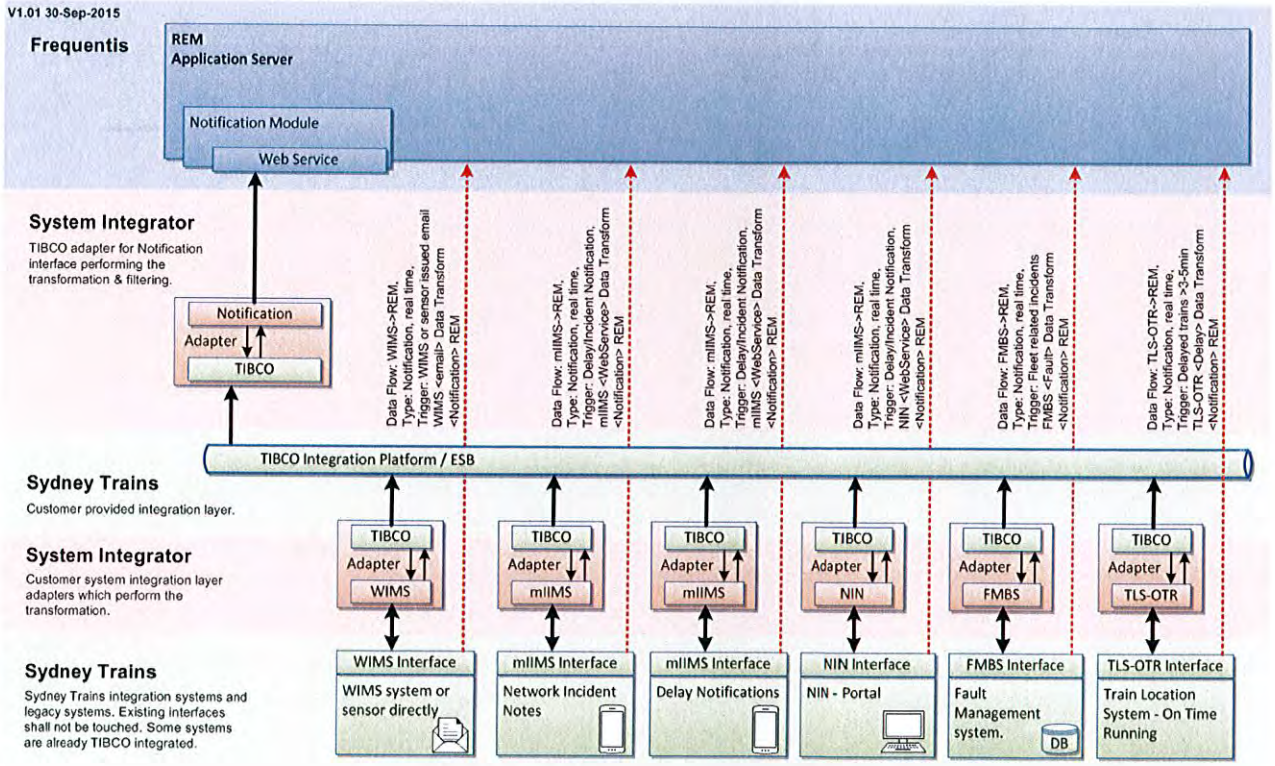


Figure 5: High Level Notification integration scheme

Note: The double arrows between the existing Sydney Trains applications and TIBCO system adaptors represent possible request / response messages, not indicating the direction of information flow, which in this instance are inbound notification details from existing systems.

6.4.2.1 Working Principle

The REM Application server supports a generic Notification interface allowing the integration with different Notification source systems. The Notification – TIBCO Adapter provided by the System Integrator acts as a master-client for all other customer systems in order to avoid customisations in the existing systems landscape.

6.4.2.2 Encryption

The REM Application Server will provide a Web Service for the information exchange. HTTPS encryption and security methods can be implemented in order to secure the communication.

available by Frequentis which needs to be supported by the Business Processes applicable for such scenarios.

Frequentis would like to highlight that the Business Continuity topic is not only limited to REM, but to all systems and services interfaced by the IMS system. If full Disaster Recovery scenarios need to be supported by the Business Continuity model, solutions for all systems interfacing REM need to be elaborated and implemented. The implementation of such solutions is regarded a CSI delivery.

11.2 Pre-Production Environment Architecture

TODO: Add detail on the SIT environment or reference the Technology Environment Test Strategy as appropriate.

11.3 Development Environment Architecture

The REM COTS product development environment is located in Vienna.

The existing ST application development environments are located in the Fujitsu data centre (TBC)

The ST ROC program TIBCO development environment is expected to be a new instance of the existing Sydney Trains AWS TIBCO development environment. This is to allow the ST ROC program to build the required TIBCO environment without impact from, or impact to, the existing AWS TIBCO development environment that is being used by the EAM program.

TODO: Add detail on the development environment for TIBCO integration build or reference the Technology Environment Test Strategy as appropriate.

11.4 Demonstrator System Architecture

In order to Build, Verify and Validate REM configuration, reference and Master Data Collation, the installation of a REM Demonstrator System is foreseen, which could be used sub sequentially for REM Training purposes.

Training utilisation in detail:

- REM System Administrator Training
- REM Application Administrator Training
- REM Train the Trainer Training (as preparation for End User Training)

The preferred location for this system is Level 13 477 Pitt St. Sydney Train Office.

The figure below illustrates the REM Demonstrator System architecture.

12 Security Design Aspects

This section is documented in the ROC Release 1 – IMS Non-Functional Design document. As such it will not be elaborated here. Please refer to section 5.15 in the ROC Release 1 – IMS Non-Functional Design document, which details the security-related design aspects related to the ROC Release 1 detailed non-functional technical business requirements.

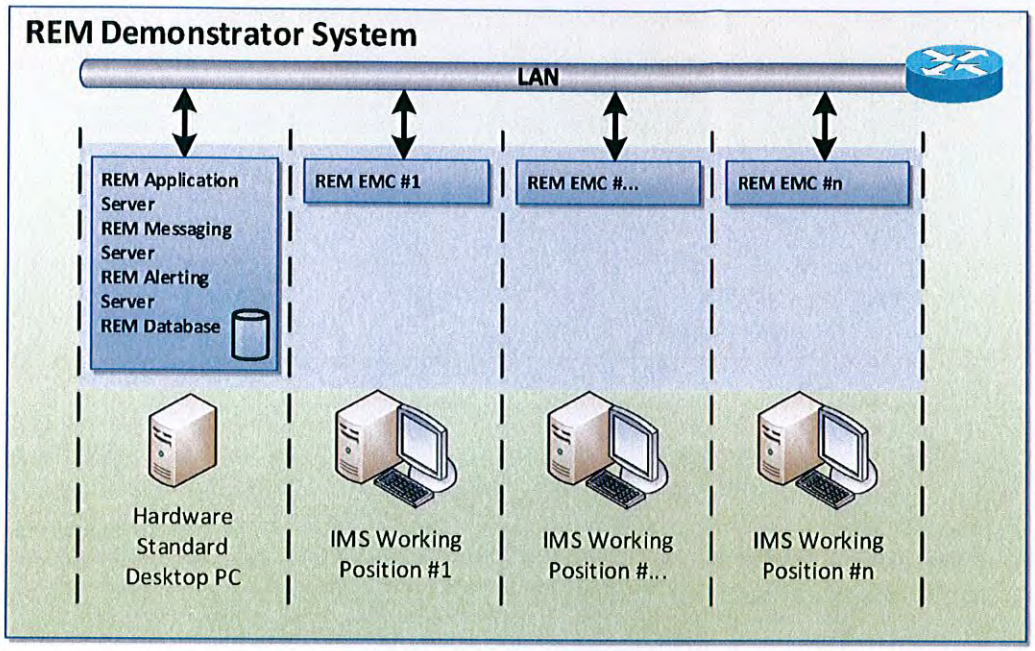


Figure 7: REM Demonstrator System

Please note, that the above scheme illustrates a standalone installation of the REM Demonstrator System with no connectivity to the Sydney Trains network infrastructure and business facilities.

1. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number	2
Date of Change Request	16 June 2016
Originator of need for Change Request	Customer
Proposed Implementation Date of Change	16 June 2016
Date of expiry of validity of Change Request	Not Applicable
Contractor's estimated time and cost of evaluation	Not Applicable
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**	Not Applicable

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**
10/02/16	*1*	*As set out in CR1*	*Bob Allum*
16/06/16	2	*See below*	*Bob Allum*

DETAILS OF CHANGE REQUEST

Summary

The current Project Implementation and Payment Plan (PIPP) provides for IMS Detailed Design (Release 1) Phase, as well an Initial Implementation (Release 1) Phase encompassing the software licence and preliminary build activities for the Contractor's REM 2016.1 product.

The Customer has requested, and the Contractor has agreed, to:

a) include mobile functionality into the REM 2016.R1 build. This requires additional customisation of the REM 2016.R1 software, as well as provision of certain REM Mobile Licences; and
b) provide a Systems Administrator to support certain activities being undertaken during the Initial Implementation (Release 1) Phase from 1 May to 31 August 2016 (such activities are contemplated as continuing under the Final Contract (as defined in the Additional Conditions)).

SCOPE

The scope of this CR2 comprises:

(a) enhanced preliminary build activities to enable certain mobile functionality (**REM Mobile**) to be incorporated into the REM2016.R1 system;
(b) provision of additional Licensed Software, being:
    (i) REM Mobile Server Licences; and
    (ii) REM Mobile Notification Sender App Licences,
    (together **REM Mobile Licences**) in connection with REM Mobile; and
(c) provision of a Systems Administrator to support certain activities being undertaken during the Initial Implementation (Release 1) Phase (such activities are contemplated as continuing under the Final Contract).

For the purposes of the Initial Implementation (Release 1) Phase only:

(a) the supported operating systems for the REM Mobile Licences are iOS 8.4 and iOS 9. The Parties will agree the operating system requirements for REM Mobile beyond the Initial Implementation (Release 1) Phase and document such requirements in the Final Contract; and
(b) the Price for the REM Mobile Licences is only 40% of the full licence price for the respective module due to the reduced functionality required by the Customer for Release 1 only, as described in the "ROC-TEC-SR-0001 V2.0 – Incident Management System R1 DTBRS" document. Full mobile functionality for REM IMS will be required and will be provided for under the Final Contract.

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

The effects of CR2 are:

(a) updates to existing, as well as introduction of new, Services and Deliverables descriptions in section 6.3 and section 6.4 of the PIPP;
(b) incorporation of additional Deliverables for WBS in section 7.4 of the PIPP;
(c) revision of the Payment Plan in section 12 of the PIPP to incorporate the new Deliverables, as well as the System Administrator;
(d) updates to Appendix C of the PIPP (Project Schedule) to incorporate the new Deliverables;
(e) updates to Appendix F of the PIPP (RACI) to incorporate the new Deliverables; and
(f) amendments to the Module 3 Order Form to reflect the inclusion of the REM Mobile Licences.

EFFECT OF CHANGE ON PROJECT TIMETABLE

No Change. The amendments detailed in this Change Request are necessary to accord with the existing Project Schedule.

New PIPP (annexed)

A new PIPP is not required. However, as the changes to the PIPP are extensive, the current PIPP is replaced in its entirety as set out in Attachment 1 to this Change Request.

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

The effect of CR2 is to increase the value of this Detailed Design Agreement by $592,345 resulting in the revised value of [redacted] (Ex. GST). The Customer has agreed to pay this additional cost upfront, on execution of this Change Request.

Please refer to Section 12 of the updated PIPP in Attachment 1 for a full break down of the relevant Prices.

CHANGES TO CSI

No change.

CHANGES TO CUSTOMER PERSONNEL

No change.

CHANGES TO CUSTOMER ASSISTANCE

No change.

PLAN FOR IMPLEMENTING THE CHANGE

Not applicable. Detailed Design (Release 1) Phase Deliverables have been finalised and reflect the changes proposed in this Change Request. Initial Implementation (Release 1) Phase activities augment the activities currently being performed by the Contractor.

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Contractor

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Customer

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

None.

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

None.

EFFECT ON USERS OF THE SYSTEM/SOLUTION

None.

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Additional documentation will be supplied as detailed in the updated PIPP set out in Attachment 1 to this Change Request.

EFFECT ON TRAINING

None.

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

None.

ASSUMPTIONS

None.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

The following documents form part of this Change Request (in addition to this Change Request Form):

(a) the revised PIPP set out in Attachment 1 to this Change Request; and
(b) the amended Module 3 Order Form set out in Attachment 2 to this Change Request.

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

The PIPP is amended as set out in the revised PIPP set out in Attachment 1 to this Change Request. Amendments include the following:

- 6.3.1
  - 1A - additional Deliverable;
  - 5A - additional Deliverable;
  - 7A - additional Deliverable; and
  - 16 - additional Deliverable.
- 6.4.2
  - 2 – updated Deliverable name & updated description;
  - 3 – updated Deliverable description;
  - 6 - updated Deliverable name for congruence across documentation;
  - 8 – additional Deliverable;
  - 9 – additional Deliverable;
  - 10 – additional Deliverable;
  - 11 – additional Deliverable; and
  - 12 – additional Deliverable.
- 6.4.3
  - 5 – updated deliverable name for congruence across documentation; and
  - 8 – additional contractor responsibility.
- 7.4
  - WBS 24 – additional Deliverable;
  - WBS 25 - additional Deliverable;
  - WBS 29 - updated Deliverable name for congruence across documentation;
  - WBS 38 - updated Deliverable name for congruence across documentation;
  - WBS 39 - addition of required document;
  - WBS 40 - addition of required document;
  - WBS 41 - addition of required document;
  - WBS 42 - addition of required document; and
  - WBS 43 - addition of required document.

The following items of the Module 3 Order Form are amended as detailed in the updated Module 3 Order Form set out in Attachment 2 to this Change Request:

- Box 2 (Class of licence) - updated order details;
- Box 3 (Designated Equipment) - updated order details;
- Box 5 (Extension of period to notice to Renew license) - updated order details; and
- Box 10 (Ancillary Services) - updated order details.

AUTHORISATION

Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

CHRISTIAN DORNER

Print name

24th June 2016

Date

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability

Signature of Customer Representative

MARK JONES

Print name

24-06-2016

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

Attachment 1 – PIPP

ANNEXURE B TO THE CUSTOMER CONTRACT

Schedule 12: PIPP

1. Introduction

1.1. The Customer is establishing a new Rail Operations Centre (ROC).

1.2 The Customer wishes to implement new technologies at the ROC which will provide enhanced capability to improve key 'day of operations' processes (the ROC Technology Solution).

1.3 The ROC Technology Solution consists of the development of four new technology systems (or system capabilities). These systems include:

a) Day of Operations Timetable System (DTTS);

b) Incident Management System (IMS);

c) Customer Information Management System (CIMS); and

d) Operational Visual Display System (which will be tendered at a later date).

1.3A The Contractor has been selected as the contractor responsible for the Services and Deliverables specified in this PIPP in respect of section 1.3(b).

1.4 By implementing the ROC Technology Solution the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail – Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay** - Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15 % by 2018.
Increased operational performance and opportunity for timetable enhancements – Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay** – Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the service back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The program shall reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer	**Reduced Customer Perceived Delay** - Improvements to the timeliness, relevance and consistency of customer

information during delays – Improving the customers' ability to make decisions about their transport options.	information, particularly during disruption, will reduce the customer's perceived time of their journeys by 11% by 2018.
Better realising the benefits of future investments in rail capacity – Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function** - The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc.). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC Infrastructure design requirements.
A new world class operating centre and culture – Transforming the way 'day of operations' activities are managed within Sydney Trains, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment** - The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service – Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX** - The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability – Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX** - enabled by new systems, process improvements and colocation.

(together, the ROC Technology Solution Objectives).

1.5 To allow the Customer to better evaluate the Contractor's Solution for the ROC Technology Solution, the Customer wishes to engage the Contractor to undertake the Services and Deliverables specified in sections 4, 5 and 6 of this PIPP including, among other things, the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase (the **"Project"**).

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of the Project.

1.7 The sequence of the ROC Technology Solution has been staged as follows:

a) the RFP which solicited the solution being proposed by the Contractor;

b) the High Level Solution Design Phase which assessed the veracity of the proposed solution and the capability of the Contractor. The Deliverables of the High Level Solution Design Agreement represent the core documents required by the Contractor to provide the Detailed Design Deliverables;

c) the Project which is undertaken during the Detailed Design Phase; and

d) subject to the Customer's acceptance of the Contractors performance and related Deliverables under the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase (including negotiation of a Final Contract that may encompasses a number of the obligations of this Customer Contract) the Customer may, at its sole discretion, notify the Contractor of its intention to transition to the Final Contract. In such situation, this Customer Contract will lapse concurrently to the commencement of the Final Contract in accordance with clause 18.4 of the Additional Conditions.

1.8 On or around 10 August 2015 the Parties entered into a letter of intent (**LOI**) under which the Contractor supplied certain services and deliverables (**LOI Deliverables**) that are within the scope of the Deliverables that are to be supplied under this Customer Contract. The Parties acknowledge and agree that:

a) the LOI has been superseded by this Customer Contract and the LOI is of no further effect:

b) any sums paid under the LOI are taken to have been paid under this Customer Contract;

c) the terms of this Customer Contract apply to the LOI Deliverables; and

d) the LOI Deliverables are deemed to have been supplied under this Customer Contract and are Deliverables for the purposes of the Customer Contract.

2. Overview of scope of work and Project delivery model

2.1 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional services and deliverables agreed by the parties as the responsibility of the Contractor;

b) perform all other services functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i. reasonably related to the services or deliverables described in this PIPP; or
ii. reasonably required for the supply of the Deliverables described in this PIPP; and

c) complete the Project, and supply the Services and Deliverables in the following phases:

i. the Project Preparation Phase;
ii. the Detailed Design (Release 1) Phase; and
iii. the Initial Implementation (Release 1) Phase

3. Definitions

Capitalised terms which are not defined in this document have the meaning given to them in the Order Form or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

Acceptance Criteria means the criteria set out in Appendix G.

Build Phase means all activities required to deliver the Solution under the Final Contract

CIMS has the same meaning given to that term in the Additional Conditions.

CNS means CNS Solutions and Support GmbH;

Contract Price has the meaning given to that term in section 12.1.1 of this PIPP.

Delivery Risks means the actual or potential problems, issues or risks that may adversely affect the Contractor's ability to perform its obligations relating to the Project or the ROC Technology Solution.

Detailed Design means the Contractor's design of its Solution that has been developed as a Deliverable under the Customer Contract including the Detailed Design Documents.

Detailed Design Document means each document that is developed by the Contractor as part of the Detailed Design Phase and approved by the Customer.

Detailed Design Phase means the phase of work that includes the Detailed Design (Release 1) Phase and work associated with Release 2 and Release 3.

Detailed Design (Release 1) Phase means the phase described in section 5 of this PIPP.

Dispute means any dispute or disagreement between the Contractor and an Other Contractor (or a dispute between Other Contractors) arising out of or in connection with the Project. A reference to a Dispute, where the Dispute is partly resolved, refers to the unresolved part of the Dispute.

DTBRS means Detailed Technical Business Requirements Specification, as set in Appendix A (Part 2) of this PIPP;

DTTS has the same meaning given to that term in the Additional Conditions.

Effective Date means the date the Contractor undertook early services under the letter of intent dated 10 August 2015

Environment has the same meaning as 'Customer Environment' in the Additional Conditions.

Entry Criteria means for a phase, the criteria that must be met before the Contractor is entitled to commence the work for that phase, as set out in this PIPP.

Final Contract has the same meaning given to that term in the Additional Conditions.

High-Level Design has the same meaning as the term in the Additional Conditions.

High Level Solution Design Agreement means the contract entered into between the Customer and the Contractor for the design services (which includes the High-Level Design) on or about 24 December 2014.

High Level Solution Design Documents means each document (including the High-Level Design) that is developed by the Contractor as part of the High Level Solution Design Phase and approved by the Customer as CSI.

High Level Solution Design Phase means the phase preceding the Detailed Design Phase.

Implementation & Maintenance Phase means the phase, if the Contractor is selected, for the implementation and maintenance of the Solution.

Initial Implementation (Release 1) Phase means the phase described in section 6 of this PIPP.

IMS has the same meaning given to that term in the Additional Conditions.

Initial Requirements means the requirements set out in Appendix A (Part 1) of this PIPP

Issues Register has the meaning given to that term in section 7B.4.1 of this PIPP.

Milestone Acceptance Form means the acceptance forms in the same or substantially the same form as Appendix E.

Other Contractors has the same meaning as 'Interfacing Contractor' in the Additional Conditions.

PCAR means the Project Concept and Review document, as set out in Appendix A (Part 2) of this PIPP.

Personnel means, as applicable, any director, officer, employee, agent, contractor, sub-contractor or professional advisers engaged in, or in relation to, the performance or management of the Customer Contract.

Project has the same meaning given to that term in section 1.5 of this PIPP.

Project Preparation Phase means the phase described in section 4 of this PIPP.

Project Schedule means the schedule set out in Appendix C which sets out the delivery dates for the Services and Deliverables during the Detailed Design Phase.

Release 1 means the implementation of and integration of IMS into the Customer's legacy environment.

Release 2 means the implementation of and integration of CIMS and DTTS into the Customer's legacy environment.

Release 3 means the integration of IMS, CIMS and DTTS systems with one another in the Customer's environment.

REM IMS means Rail Emergency Management Information Management System.

REM Mobile 2016.R1. means the mobile functionality included in REM 2016.1R1 under Change Request 2, as described in the DTBRS.

REM Mobile Software means the items of Licensed Software set out in the Module 3 Order Form required for REM Mobile 2016.R1.

REM 2016.1R1 means the Licensed Software upgraded by the Contractor to reflect the Customer's Requirements as described in the Technical Documents and includes REM Mobile 2016.R1.

Requirements means the Initial Requirements as updated by the Updated Requirements.

Requirements Variation has the meaning given to that term in section 7.2.1 of this PIPP.

RFP has the same meaning given to that term in the Additional Conditions.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC Technology Solution has the meaning given to that term in section 1.2 of this PIPP.

SAD means the Solution Architecture Document, as set out in Appendix A (Part 2) of this PIPP.

Solution has the meaning given to that term in section 7.1.8 of this PIPP.

System Integrator means Ajilon Australia Pty Ltd (ABN 25 076 517 354).

Technical Documents means the following Documents set out in Appendix A (Part 2) of the PIPP:

a) Release 1 Architecture Specification for REM Rel 2016.1 V3.0;

b) Release 1 Functional Specification for REM Rel 2016.1 V3.0;

c) Release 1 Integration Specification for REM Rel 2016.1V3.0; and

d) Updated Release 1 Product Gap Analysis (High level business requirements) V5.0.

Updated Requirements means the Initial Requirements that are updated in the Detailed Design, including the Technical Documents, SAD and DTBRS.

4. Project Preparation Phase

4.1 Overview and purpose of Phase

4.1.1 The purpose of the Project Preparation Phase is to validate the Contractor's strategic intent and the Solution scope.

4.1.2 During the Project Preparation Phase, plans and schedules are prepared and Project resources committed.

4.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Project Preparation Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Project Preparation Phase are approved by the System Integrator,

on or before relevant date(s) specified in the Project Schedule.

4.2 Entry Criteria

4.2.1 The Entry Criteria for the Project Preparation Phase is specified in the table below:

#	Criteria	Description
1.	Customer Contract execution	The Contractor and the Customer have executed the Customer Contract.
2.	Acceptance of High Level Solution Design Deliverables	The Customer has accepted the Deliverables submitted under the High Level Solution Design Agreement or, where conditional acceptance was provided by the Customer, the Contractor has initiated remediation of the conditionally accepted Deliverables.
3.	Personnel	The Contractor provides details of the Contractor Personnel proposed for the Detailed Design (Release 1) Phase, as well as the Final Contract.

4.3 Services

4.3.1 The Contractor must supply the following Services as part of the Project Preparation Phase:

#	Description
1.	Prepare for Project kick-off, including: a. engaging the Personnel with the required skill sets to perform the Contractor's

	obligations under this PIPP; and b. collating and confirming the names and contact details of those Personnel with the Customer.
2.	All things necessary to prepare for the workshops to be conducted in the Detailed Design (Release 1) Phase, including: a. planning for the Detailed Design (Release 1) Phase workshops; b. assigning the Personnel with the required skill sets to facilitate the Detailed Design (Release 1) Phase workshops; c. requesting Customer Personnel based on required skill sets to attend Detailed Design (Release 1) Phase workshops; and d. preparing materials to facilitate the Detailed Design (Release 1) Phase workshops.
3.	Assess (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project and the ROC Technology Solution) and identify: a. any issues; and b. risks that may arise during the course of the Project and the ROC Technology Solution.
4.	Review and update the Issues Register to accurately and comprehensively identify all of the issues and risks that the Customer has identified relating to the Project and the ROC Technology Solution.
5.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Project Preparation Phase.
6.	Provide a list of technical requirements for Detailed Design (Release 1) Phase (e.g. remote access).
7.	Participate in the Customer's induction training or other courses as may be required, from time to time.
8	All things necessary to develop and supply the Deliverables described in section 4.4.

4.3.2 The Contractor must supply the Services which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.4 Deliverables

4.4.1 The Contractor must supply the following Deliverables as part of the Project Preparation Phase:

#	Deliverable	Description	Approver
1.	Detailed Design (Release 1) Phase workshops and planning documents	The following materials required to participate in the workshops required during the Detailed Design (Release 1) Phase. a. workshops and playback schedules; b. Project Schedule (including delivery dates for each Deliverable); c. pro forma workshop agenda;	The Customer (or its nominee)

		d. list of Contractor participants; and e. list of Customer participants roles.	
2.	Templates and Standards	Agreement of Detailed Design documentation templates to be used by the Contractor.	The Customer (or its nominee)
3.	Detailed Design Phase Deliverables	Finalisation of the agreed list of Detailed Design (Release 1) Phase Deliverables that were conditionally accepted by the Customer during the High Level Solution Design Phase.	The Customer (or its nominee)
4.	Personnel	The Customer must approve the list of Specified Personnel proposed for the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase	The Customer (or its nominee)

4.4.2 The Contractor must supply the Deliverables which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.5 Customer approval

4.5.1 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Project Preparation Phase in accordance with Additional Condition clause 5.

5. Detailed Design (Release 1) Phase

5.1 Overview and purpose of Detailed Design (Release 1) Phase

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design all of the Requirements (based on the Initial Requirements) and develop Detailed Design(s) for Release 1 of the ROC Technology Solution.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase are approved by the Customer (or its nominee),

on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Previous Phase Discharged	All Services that the Contractor is required to supply during the Project Preparation Phase have been supplied.
2.	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
1.	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Contractor as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensure all required Contractor Personnel are present at the meeting(s); c. chairing and presenting the Project meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtain participant approval of contents.
2.	Participate in all necessary workshops with the Customer, the System Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes in those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
3.	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
4.	Develop a Detailed Design for the ROC Technology Solution for Release 1.
5.	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Contractor's configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of the ROC Technology Solution Release 1 to be implemented is understood by all parties.
6.	Conduct a risk management workshop with the Customer, the System Integrator and all relevant Customer stakeholders to identify and agree on risks to the ROC Technology Solution Release 1.
7.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Detailed Design (Release 1) Phase.
8.	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project) to enable the Other Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4.

9. All other things necessary to develop and supply the Deliverables described in section 5.4 and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Deliverables

5.4.1 The Contractor is responsible for the following Deliverables with appropriate input from the System Integrator. Refer to the Appendix F for allocation of accountabilities and responsibilities.

5.4.2 The Transformation and Change Deliverables (as specified below in section 5.4.4.) are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Contractor during the High Level Solution Design Phase.

5.4.3 Where the Contractor must contribute to a Deliverable specified in section 5.4.4, the Contractor must work with, contribute to and provide all reasonable assistance requested by the System Integrator to complete the relevant Deliverable.

5.4.4 The Contractor must, in collaboration with the Other Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase:

#	Deliverable	Description	Approval
Technology Deliverables			
1.	Updated High Level Solution Design	Contribute to the updating of the High-Level Design Deliverable being developed by the System Integrator. The Updated High Level Solution Design must be updated to reflect the findings by the Contractor and System Integrator during the Detailed Design (Release 1) Phase and be based in the High Level Design submitted by the Contractor during the High Level Solution Design Phase.	The Customer (or its nominee)
2.	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms & technology required to deliver the functional & non-functional requirements. The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. Document Overview; b. Document Inputs; and c. Phase Scope; Systems architecture: a. High Level Conceptual Overview; b. Level 2 Business Processes;	The Customer (or its nominee)

		c. Application Usage View; d. System Integration View; e. Application Structure View; f. Information Architecture (including Reference data requirements); g. Infrastructure Usage View; h. Implementation and Deployment View; and i. Manual Integration; Rationale and justification for detailed design architectural approach: a. Rationale; b. Architecture Risks; c. Architecture Issues; d. Architecture Constraints; e. Architecture Assumptions; f. Architecture Decisions; and g. Architecture Dependencies;	
3.	Release 1 Functional Specification	The Release 1 Functional Specification defines the system's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS that shall be developed by the Customer during Detailed Design. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)
4	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1 Phase. The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability;	The Customer (or its nominee)

		e. manageability; f. performance; g. portability; h. reliability; i. reporting; j. scalability; k. security; and l. usability.	
5.	Release 1 Integration Specification	The Release 1 Integration Specification describes the high level integration points between the REM IMS and other systems. A detailed interface specification for each interface will be created by the Systems Integrator during the Build Phase. The following subjects are included in the Release 1 Integration Specification, one entry for each integration service : a) high level data flows between applications to support the business processes; b) data objects required by consumer – request; c) data objects available from consumer – response; and d) data object transformations required. The Release 1 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each interface to be created by the Systems Integrator during the Build Phase will describe the relevant Acceptance Criteria for each interface.	The Customer (or its nominee)
6.	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)
7.	Release 1 Data Management Plan	This document defines: a) the design, build, control and data management activities required to ensure	The Customer (or its nominee)

		data quality of all data (reference data, master data and transactional data) within REM IMS, based on business rules provided by the Customer, and effective and efficient system integration of REM IMS with other Customer systems; b) a high-level approach to management of all data within REM IMS which aligns with the approach outlined in the SAD.	
8.	Release 1 Data Technical Analysis Outputs	Contribute to Release 1 Data Technical Analysis Outputs must include: a. Data Requirement Classifications (Master data, Migration Data, BI data); b. Data Migration Requirements and Rules; and c. Data quality definition (at data attribute levels). Release 1 Data Technical Analysis Outputs also includes: 1. for each type of reference data and master data used by REM IMS (as appropriate): a) the real-world object type represented by that data set; b) the recommended data maintenance method(s) in REM IMS; c) the relevant SME(s), functional owner(s), source of requirement and/or Customer source from which the data may be obtained; d) whether REM IMS can play the role of DMA source for that data; e) the volatility of that data; and f) data translations (if any) required to integrate with existing Customer systems 2. for each type of master or reference data requested by REM IMS from other Customer systems: a) what data is required in the request and response messages; b) the business rules governing each message; and c) how those business rules are enforced; 3. for each type of transactional data flowing between REM IMS and another system (in either direction): a) the source and target systems; b) the message type and message header type; c) any encryption, security or certification considerations; d) the methods used to handle non-compliant data in the source system; e) any record selection filters required; and f) any record level transformations required.	The Customer (or its nominee)
9.	Updated Technology Implementation	Contribute to the development of the Updated Technology Implementation Strategy being developed by the System Integrator. The Updated	The Customer (or its

	Strategy	Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the ROC Technology Solution, including, at a minimum: a. personnel & organisation; b. implementation approach, including: i. releases; ii. system verification and validation; iii. system change management; iv. release & deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for 'go-live'; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function. .	nominee)
10.	Release 1 Technology Implementation Plan (Template)	The Release 1 Technology Implementation Plan (Template) will be developed and agreed. The plan will outline the plan approach for the roll out of the relevant components for Release 1. The final version of Release 1 Technology Implementation Plan will be developed during the Build Phase and provide a detailed plan and schedule of activities to deploy the Solution into the Environment. It must address training, development of, and installation of the REM IMS into the Environment, cutover and roll back. Note: The final version must be provided at least 40 Business Days prior to the anticipated deployment date for Release 1.	The Customer (or its nominee)
11.	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the System Integrator. The Technology Test Strategy refers to the program test framework and must include the following:	The Customer (or its nominee)

		a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability. Assumptions, test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document Revision & History; and i. Approvals.	
12.	Updated Project Management Plan	Contribute to the development of the Updated Project Management Plan (UPMP) being developed by the System Integrator. The UPMP shall be based on the project management plan submitted by the Contractor during the High Level Solution Design Phase and updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The UPMP must specify, as a minimum, the following: a. current project status; b. project overview; c. scope & deliverables; d. solution approach, including: I. architecture & phase approach; II. organisation Change management; and III. delivery approach; e. budget & schedule; f. dependencies; g. roles & responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for	The Customer (or its nominee)

		Deliverables identified in section 7.4; and k. key risks & issues.	
13.	RACI	Contribute to the RACI Deliverable being developed by the System Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Other Contractors and the Customer. Note an initial draft of the Detailed Design document deliverables RACI is listed in Appendix F.	The Customer (or its nominee)
14.	Agreed Final Contract	The Final Contract will incorporate certain detailed design activities. The Final Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor
15.	Detailed Implementation & Maintenance Phase PIPP	The Detailed Design, Implementation and Support PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	The Customer and Contractor
16.	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)
17.	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the System Integrator. The Release 1 System Test Plan describes how the testing will be delivered for the Release 1 System Test phase and must include: a. Test plan identifier; b. References; c. Introduction; d. Test Objectives; e. Test items; f. Software risk issues; g. Features to be tested and traceability;	The Customer (or its nominee)

		h. Features not to be tested and reasons; i. Approach including the use of stubs, simulators etc; j. Item pass/fail criteria (if different from Strategy); k. Suspension criteria and resumption requirements (if different from Strategy); l. Test deliverables; m. Environmental needs; n. Staffing and training needs (if different from Strategy); o. Responsibilities; p. Schedule of tasks and assigned staff; q. Planning risks and contingencies; r. Approvals; and s. Glossary.	
18.	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the System Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)
19.	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the System Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. Booking and reserving test systems; b. Tracking environment changes; c. Managing environment contention; d. Code/Defect management (Code promotion processes); e. Environment scheduling;	The Customer (or its nominee)

		f. Configuration tracking; g. Data Management (Extracts, transforms loads); and h. Managing interdependent projects.	
Transformation and Change Deliverables			
20.	Operating Model	Contributing to the development of the Operating Model being developed by the System Integrator. The Operating Model must document and /or identify: a. best practice levels 2-4 process flows; and b. capability gaps in systems and processes. The process model will conform to best practice principles. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation. Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Best practice process flows Deliverable description:** The best practice process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following: a. best practice levels 2-4 process flows; b. validation of processes against real life scenarios . **Capability gaps in systems and processes deliverable description:** Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended best practice process flows to confirm the changes to processes and capabilities. The key focus of this deliverable will be on the level	The Customer (or its nominee)

		4 gaps and/or variations in processes as dictated by the out of the box technology processes.	
21.	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)
22.	Change Impact Analysis (Release 1)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions (note updated assumptions section): a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes	The Customer (or its nominee)

		within the ROC. A Change Impact Analysis will accompany the Release 1.	
23.	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the System Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)

5.4.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6. Initial Implementation (Release 1) Phase

6.1 Overview and purpose of Initial Implementation (Release 1) Phase

6.1.1 The purpose of the Initial-Implementation (Release 1) Phase is to:

a) enable the Contractor to commence the development and implementation of the Requirements into the REM product road-map so that the next release of the Licensed Software can fulfil the specifications and functionality specified in the Technical Documents; and

b) ensure the Licensed Software is available for testing in the System Integration Test Environment (SIT).

6.1.2 The scope of the Services and Deliverables under the Initial Implementation (Release 1) Phase explicitly excludes integration of the Licensed Software into the SIT environment, testing on-site and adaptation of the interfaces with Other Contractors' software.

6.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Initial Implementation (Release 1) Phase are supplied and completed;

b) all Deliverables that it is obliged to supply under Initial -Implementation (Release 1) Phase are approved by the Customer (or its nominee); and

c) the Licensed Software delivered under section 6.4 includes each of the Updated Requirements,

on or before the relevant date(s) specified in the Project Schedule.

6.2 Entry Criteria

6.2.1 The Entry Criteria for the Initial Implementation (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Detailed Design (Release1) Phase completed to necessary level to start the Initial Implementation (Release 1) Phase	All Services that the Contractor is required to supply during the Detailed Design (Release 1) Phase have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1) Phase.
2.	Previous Phase Deliverables Completed	The Customer has Accepted all Deliverables supplied in the Detailed Design (Release 1) Phase or, in the Customer's sole and absolute discretion, are at the necessary level to start the Initial Implementation (Release 1) Phase. Where one or more Deliverables in the Detailed Design (Release 1) Phase have not been Accepted by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.

6.3 Services

6.3.1 Subject to section 7.7, the Contractor must supply the following Services as part of the Initial Implementation (Release 1) Phase:

#	Description
1.	Adaptation of the Licensed Software to reflect the Customer's Requirements for REM 2016.1 as specified in the Technical Documents.
1A	Customisation of REM Mobile 2016.R1 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis for REM Mobile 2016.R1 v1.00, based on the DTBRS.
2.	Document and define system interfaces as detailed in the Technical Documents.
3.	Inclusion of four (4) additional Customer gap features that have been specified during the Detailed Design (Release 1) Phase into the Licensed Software. Refer to the document titled "DTBRS GAP Analysis Version 3.0" for a list of the relevant items identified with a planned delivery date of 30/04/2016.
4.	Preparation of off shore testing of the Licensed Software that shall include setup of in-factory test environment
5.	**On site Test Preparatory Activities (REM 2016.1R1)** a) set up test of non-Production Licensed Software; b) definition of interfaces and Software components for testing; c) analysis and generation of test data in relation to REM2016.R1 Licensed Software; and d) Set up test of interfaces according to Release 1 Integration Specification.

5A	**Internal Contractor System Integration & Test for REM Mobile Software** a) REM Mobile Software installation and REM Mobile Software Update; b) configuration of Interfaces and Licensed Software components; c) test of interface; d) boundary testing (e.g. timeouts, connection issues, reconnection, data mismatch); and e) capturing of log-files and coordination with the Contractor's factory. All listed services are performed on the Contractor's internal REM Development environment before SIT (which will be within the scope of the Final Contract). For clarity, as set out in section 6.1.2 above, the scope of the Services under the Initial Implementation (Release 1) Phase excludes integration of the Licensed Software into the SIT environment, testing on-site and adaptation of the interfaces with Other Contractors' software.
6.	**Data Profiling Support:** Support of data profiling activities performed by the Systems Integrator comprising 4 workshops and preparation for the same.
7.	**Data Management Support (On-shore & Off-Shore):** Technical support of the Contractor's data management team
7A	**Configuration Data Import for REM Mobile 2016.R1. (off-site):** Initial import of configuration data into the REM Mobile 2016.R1 data base.
8.	**Master Data Import / Export (offsite) support** Support of the process of master data gathering, preparation and importing into the different REM system environments in the different project stages, including the following activities: a) master data input as defined in an XLS-template provided by the Contractor; b) clarification of data structure specified in the XLS template; c) dry-run of the provided Master data XLS template on the relevant development system; d) one time import of the XLS-template to database on the Customer's Environment (further imports based on database dumps performed by SIT & System test) (Note: SAT and UAT will be performed in the implementation phase of the Final Contract; Additional required support can be ordered by the Customer via Change Request
9.	**Project Management as detailed in Appendix B**
10.	**Solution Architecture Support as detailed in Appendix B**
11.	**System Engineering:** Support of the System Integrator's System Administrator and maintenance of pre-Implementation environments until handover to the Customer of the master data import / export (on-site).

12. **Solution Consultancy Support as detailed in Appendix B**

13. **Quality and Requirements Management as detailed in Appendix B**

14. **System Administration Training:** Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of the REM IMS.

The Contractor will provide and run a single course over 3 days, for up to 12 attendees.

The aim of the course is to provide attendees with training enable the attendees to:

a) identify components of the REM IMS and assign them to system structures;
b) explain the functionality and purpose of the individual components of REM IMS, including system interfaces;
c) interpret operational and technical messages of the REM IMS and analyse causes;
d) carry out maintenance working steps for administration of the REM IMS components according to the system administration manual;
e) carry out software update procedures for the REM IMS;
f) name, readout and interpret relevant log files of the REM IMS;
g) assess the technical and operational effects of these actions; and
h) fulfil 2nd level support requirements.

15. **Application Administration Training:** The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of the incident management system for REM 2016.1.R1.

The aim of the course is to provide attendees with training enable the attendees to:

a) explain the functionality of REM 2016.1.R1;
b) explain the functionality of the REM IMS Data Management Client;
c) explain the functional data structure of REM 2016.1.R1;
d) maintain REM 2016.1.R1 configuration data;
e) configure the responsibility model;
f) configure the track network;
g) configure workflows; and
h) carry out user, role and group administration.

16 **System Administration:**

The System Administrator is responsible for all installation and administration works related to the Licensed Software in the Configuration, REM Development, TIBCO-Sydney Trains (Customer component only), SIT, UAT and training environments. This Service ends on 31 August 2016, unless extended by mutual agreement. The scope of the System Administrator during the Initial Implementation (Release 1) Phase and Final Contract are as set out below.

Under Initial Implementation (Release 1) Phase (under this Customer Contract)

The scope of the System Administrator under the Initial Implementation (Release 1) Phase includes:

a) performing application related database setups, including:
   i. set-up of database instances;
   ii. set-up of database users;

iii. set-up of schemes; and
iv. set-up of Oracle database recovery and backup procedures (optional, depending on system operation model);

b) importing and exporting of database dumps:
   i. as preparation of the test systems;
   ii. as preparation for the production environment; and
   iii. for debugging and Defect reproducing reasons;
c) performing database schema updates, as required;
d) installation and configuration of monitoring tools according to Customer standards; and
e) setup, management and tracking of users and associated access levels

Under the Final Contract (Implementation and Support)

The scope of the System Administrator under the Final Contract will include:

a) installing and deploying REM application versions of the Licensed Software on the Customer environments, including:
   i. REM Incident Management software and additional necessary software packages; and
   ii. Java and Tomcat;
b) configuration of the REM application on system level, including various configuration and start up files;
c) performing application related database setups, including:
   i. set-up of database instances;
   ii. set-up of database users;
   iii. set-up of schemes; and
   iv. set-up of Oracle database recovery and backup procedures (optional, depending on system operation model);
d) importing and exporting of database dumps:
   i. as preparation of the test systems;
   ii. as preparation for the production environment; and
   iii. for debugging and Defect reproducing reasons;
e) performing database schema updates, as required;
f) installation and configuration of monitoring tools according to Customer standards;
g) integration with sub-systems and TIBCO, including:
   i. supporting the System Integrator and engaged Customer application support teams;
   ii. configuration of REM instance connectivity;
   iii. assistance in configuration of REM backend; and
   iv. supporting and system configuration of direct integrations;
h) performing basic sanity testing of the integration and configuration;
i) validating REM instance configuration via point to point connectivity testing;
j) verifying all required connectivity from/to REM instance on each non-production environment;
k) recording, verifying, investigating and assisting to resolve all SEV1 and SEV2 defects (the definition of which will be agreed by the Parties prior to entry into the Final Contract) recorded during system shakeout in each environment;
l) recording, verifying, investigating and assisting to resolve all REM application related Defects recorded during each test phase;
m) System level issue tracing, including:
   i. identification of problem sources;
   ii. log file locating;
   iii. log file extraction and handling;
   iv. creation of defect description;
   v. reproduction of the Defect (includes knowledge of EMC and DMC and

basic understanding of system functionality); and

vi. filing an error report in the Contractor's Defect reporting tool ITMS.

For clarity, the work outlined above as being within the scope of the Final Contract will be performed under the Final Contract and not under this Customer Contract.

6.3.2 The Contractor must supply the Services which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6.4 Deliverables

6.4.2 The Contractor is responsible for the following Deliverables:

#	Deliverable	Description	Approver
1	REM System (Software Delivery Stage 2016.R1)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery 2016.R1. The software will not be implemented in to the SIT environment; it will only be made available "to be" implemented in to the SIT environment subject to the signing of the Final Contract. The Deliverable for the purpose of this phase is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.	The Customer (or its nominee)
2.	REM 2016.1R1	Release of the Licensed Software incorporating the Requirements for REM 2016.1R1 and REM Mobile 2016.R1.	The Customer (or its nominee)
3	Test Documentation *	Provision of: a) Test Summary Report for System Tests provided by the Contractor; b) Test Objective Matrix for SAT; and c) Test cases (including Test Systems) SAT	The Customer (or its nominee)
4	Interface Documentation*	Documentation for REM 2016.1.R1 to: a) SIRI interface; b) Notification interface; and c) Shadow DB interface, all as further documented in the Release 1 Integration Specification.	The Customer (or its nominee)
5	Data Model documentation*	Documentation for the REM data model	The Customer (or its nominee)
6	System Administration Training Material*	Training material for System Administration and Application Administration Training (on USB Medium), comprising: a) Trainer PowerPoint slide pack; and	The Customer (or its nominee)

		b) Server manual.	
7	User Manuals*	System Administration Manual (Operator View) comprising: a) User Manual for IMC; b) User Manual for DMC; and c) User Manual for Webportal.	The Customer (or its nominee)
8	Test Procedure Book (REM Mobile 2016.R1) *	The Contractor will create the Test Procedure Book for REM Mobile 2016.R1 SAT.	The Customer (or its nominee)
9	Test Objective Matrix for SAT (REM Mobile 2016.R1) *	The Test Objective Matrix (TOM) demonstrates test coverage to meet Customer requirements, specifications and designs. The Contractor will create the Test Objective Matrix for REM Mobile 2016.R1 SAT in accordance with the Contractors' existing in house processes.	The Customer (or its nominee)
10	Functional Specification (REM Mobile 2016.R1) *	The Contractor will create the Functional Specification (REM Mobile 2016.R1) document. The Functional Specification (REM Mobile 2016.R1) defines required capabilities, appearance and interaction with users for the mobile notifications solution for the Incident Management System in ROC Release 1. The functional specification will be used to validate that REM Mobile 2016.R1 meets the updated DTBRS developed by the Customer. Functional specifications relate to the following: a. function involving user interaction and its user interface; and b. function which is unattended processing such as batch processing,	The Customer (or its nominee)
11	Gap Analysis (REM Mobile 2016.R1) *	The Contractor will create the GAP Analysis (REM Mobile 2016.R1). The GAP Analysis (REM Mobile 2016.R1) shall be based on the DTBRS to reflect the findings by the Contractor and Other Contractors (as applicable). The GAP Analysis (REM Mobile 2016.R1) Deliverable specifies the gaps between the detailed requirements for the mobile notifications solution for the Release 1 REM IMS and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application	The Customer (or its nominee)

		enhancements; c. show traceability to the resolving business workarounds; and d. if required, identify any gaps that will not be resolved, and present a forecast of the impact to the Customer business.	
12	User Manual REM Mobile 2016.R1 *	The user manual includes a general description of the functions and capabilities of the mobile application and contains all the basic information for the users to familiarise themselves with the mobile application (REM Mobile).	The Customer (or its nominee)

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract that the Parties anticipate executing by 29 February 2016.

6.4.3 The Contractor is responsible for supporting the following Deliverables that belong to the Systems Integrator:

#	Deliverable	Description	Approver
1.	Updated Implementation Strategy	Contribute to the Updated Implementation Strategy document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
2.	Updated Project Management Plan	Contribute to the Updated Project Management Plan being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
3.	Updated Architecture Specification	Contribute to the Updated Architecture Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
4.	Updated Integration Functional Specification	Contribute to the Updated Integration Functional Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
5.	Updated Release 1 Data Technical Analysis Outputs	Contribute to Updated Data Technical Analysis being developed by the System Integrator. Outputs must include: a. data requirement classifications (Master data, Migration Data, BI data); b. data dictionary (Source and target data systems);	The Customer (or its nominee)

		c. data migration requirements; and d. data quality rules definition (at data attribute levels).	
6.	Updated Data Management Plan	Contribute to the Updated Data Management Plan document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
7.	Release 1 Technology Implementation Plan	Contribute to the Technology Implementation Plan document describing the plan for the roll out of the relevant components for Release 1 and providing a detailed plan and schedule of activities to deploy the solution into the Environment. It must address training and installation of the REM IMS into the Environment, cutover and roll back. The final version must be provided 10 weeks prior anticipated deployment date for Release 1.	The Customer (or its nominee)
8-.	Release 1 Functional Specification	Contribute to the Functional Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)

6.4.4. The Contractor must supply the Deliverables which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7. Acceptance, Change Request and Assumptions

7.1 Acceptance

7.1.1 The Contractor must:

a) in collaboration with the Customer and Other Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Other Contractors (as required) to ensure that all Deliverables that are part of the Detailed Design (Release 1) and Initial Implementation (Release 1) Phase are fit for purpose and meet the agreed Acceptance Criteria.

7.1.2 Subject to section 7.1.10, the Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Implementation & Maintenance Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

7.1.3 Deliverables will be reviewed by the Customer (or the System Integrator acting as the Customer's nominee). Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with clause 5 of the Additional Conditions, the System Integrator will request the Customer's endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

7.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

a) Milestone Acceptance Forms must be signed in writing by the Contractors Project Director and Customers Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customers delegate; notification by email of the endorsement is sufficient.

d) Contractors Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) the Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in clause 5.4 of the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

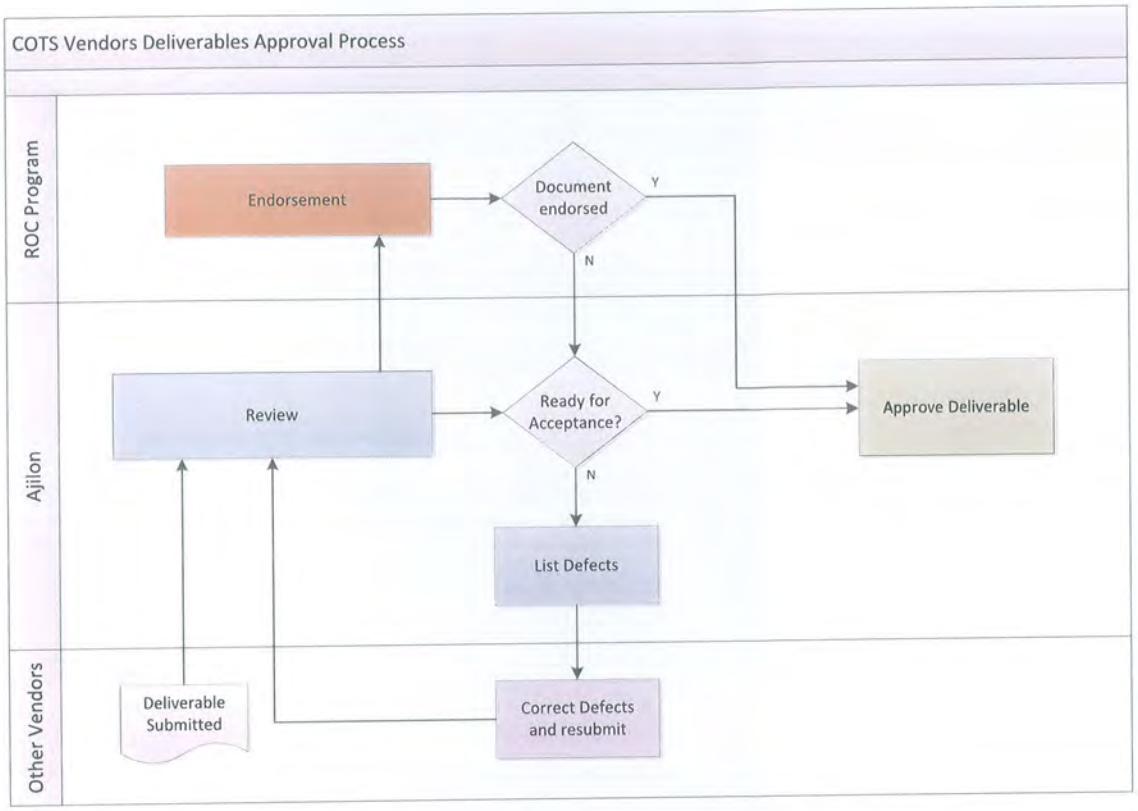
h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of defects (tracked in a spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



7.1.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7.1.6 The Contractor must ensure that the Solution, as it applies to REM IMS described in the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design (Release 1) Phase, Initial Implementation (Release 1) Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

7.1.7 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with clause 5 of the Additional Conditions.

7.1.8 The Detailed Design supplied by the Contractor under the Detailed Design (Release 1) Phase and the Deliverables supplied by the Contractor under the Initial Implementation (Release 1) Phase and endorsed/approved by the Customer/System Integrator (as applicable) will be the 'Solution' for the purposes of this PIPP.

7.1.9 For the purposes of the Customer Contract the 'Contract Specifications' for the Solution will be:

a) the Initial Requirements (as amended or updated in any documents supplied under the Detailed Design (Release 1) Phase and approved by the Customer);

b) the specifications, designs, any performance standards or other requirements for the Solution set out in any of the documents supplied by the Contractor in the Detailed Design (Release 1) Phase and approved by the Customer; and

c) any other the requirements relating to the Deliverables or the Solution as set out in this PIPP.

7.1.10 The Contractor agrees that any review, comment, approval, endorsement or election (including an election in respect of Detailed Design) or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect other Services or Deliverables under this Customer Contract, including in respect of the Detailed Design (Release 1) Phase;

b) does not limit or affect the provision of the Contractor's warranties or indemnities

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

7.2 Change Request

7.2.1 If:

a) during the Detailed Design (Release 1) Phase or the Initial Implementation (Release 1) Phase the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Initial Requirements (**Requirements Variation**); and

b) that Requirements Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

7.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 7.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits the Detailed Design,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Requirements Variation.

7.3 Not used

7.4 Summary Table of Deliverables and expected delivery dates

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Release 1) Phase and documented in the associated draft Project Schedule)

Detailed Design (Release 1) Phase

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 1	Updated High Level Solution Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 2	Release 1 Architecture Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 3	Release 1 Functional Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 4	Release 1 Non-Functional Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 5	Release 1 Integration Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 6	Project Communication Plan for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 7	Release 1 Data Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 8	Release 1 Data Technical Analysis Outputs	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 9	Updated Technology Implementation Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 10	Release 1 Technology Implementation Plan (Template)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 11	Technology Test Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 12	Updated Project Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 13	RACI	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 14	Agreed Final Contract	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 15	Detailed Implementation & Maintenance Phase PIPP	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 16	Updated Release 1 Product Gap Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 17	Release 1 System Test Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 18	Requirements Traceability Matrix for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 19	Technology Environment Management Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 20	Operating Model	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 21	Draft recommended ROC organisational structure	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 22	Change Impact Analysis (Release 1)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 23	Release 1 Training Needs Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 24	REM System Software Delivery Stage 2016.R1	*Software*	*30 April 2016*	*30 April 2016*
WBS 25	REM 2016 R1 Licensed Software	*Software*	*31 May 2016*	*31 May 2016*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 26	Test Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 27	Interface Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 28	Data model Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 29	System Administration Training Material*	*Document, PowerPoint Slides*	*31 May 2016*	*31 May 2016*
WBS 30	User Manuals*	*Document*	*31 May 2016*	*31 May 2016*
WBS 31	Updated Implementation Strategy	*Document*	*31 May 2016*	*31 May 2016*
WBS 32	Updated Architecture Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 33	Updated Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 34	Updated Integration Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS35	Updated Release 1 Data Technical Analysis Outputs	*Document*	*31 May 2016*	*31 May 2016*
WBS 36	Updated Data Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 37	Updated Project Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 38	Release 1 Technology Implementation Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 39	Test Procedure Book (REM Mobile 2016.R1) *	*Document*	*15 May 2016*	*15 May 2016*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 40	Test Objective Matrix for SAT (REM Mobile 2016.R1) *	*Document*	*15 May 2016*	*15 May 2016*
WBS 41	Functional Specification (REM Mobile 2016.R1) *	*Document*	*15 April 2016*	*22 April 2016*
WBS 42	Gap Analysis (REM Mobile 2016.R1) *	*Document*	*14 March 2016*	*21 March2016*
WBS 43	User Manual REM Mobile 2016.R1 *	*Document*	*31 May 2016*	*31 May 2016*

***Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract.**

7.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

7.6 Exclusions

Not applicable.

7.7 General Assumptions

7.7.1 **Product Capabilities - IMS-CAP-062.09**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.2 **Product Capabilities - IMS-CAP-002 / Non-functional requirements - NFR-SEC-004**-The governance over access to Sydney Trains "intranet" is under control of Sydney Trains.

7.7.3 **Product Capabilities - IMS-CAP-017.02**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.4 **Product Capabilities - IMS-CAP-039.01**-The display of a heat map for over crowding on platforms and a traffic light for visually tracking is provided as layer in the legacy GIS system.

7.7.5 **Non-functional requirements - NFR-AUD-007**-The accessibility of backend environment is controlled by Sydney Trains and/or the System Integrator.

7.7.6 **Non-functional requirements - NFR-AV-004**-Clustered hardware hosting virtual machines and the licenses for those virtual machines are provided as CSI.

7.7.7 **Non-functional requirements - NFR-IO-003**-A email server will be provided as CSI, an outgoing email address will be supported.

7.7.8 **Non-functional requirements - NFR-IO-004**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.9 **Non-functional requirements - NFR-IO-006**-The Operating Systems clock will be synchronized with standard IT synchronising mechanisms such as e.g. NTP Clock. The maintenance the support and the licenses for such SW is assumed to be provided CSI.

7.7.10 **Non-functional requirements - NFR_PER_NEW**-It is assumed that geographical diversity refers to situations where mobile users or clients lose connectivity with the system due to reception black sports or bandwidth shortage.

7.7.11 **Non-functional requirements - NFR-SEC-002**-It is assumed that the Active Directory environment is a customer supplied item.

7.7.12 **Non-functional requirements - NFR-SEC-010**-The Active Directory system will be provided and configured by Sydney Trains as CSI.

7.7.13 **Interfaces - IMS to BI**-The IMS database will be a Customer Furnished Item. The maintenance- and setup- task of such a shadow database will be part of the Sydney Trains internal IT department.

7.7.14 **Interfaces - IMS to Dashboard**-The assumption is that "Dashboard" refers to "OVDS" (Operational Video Display System).

7.7.15 **Interfaces - SMS**-It is assumed that the SMS provider is a customer furnished item.

7.7.16 **Interfaces – CTI IMS Options Paper - Comms**-It is assumed that the VCS system is a customer furnished item.

7.7.17 **Interfaces - Active Directory** -It is assumed that the Active Directory environment is a customer furnished item.

7.7.18 **Interfaces - Email** -It is assumed that the email system is a customer furnished item.

7.7.19 **Interfaces - Voice Mail**-Text to Speech Engine will be provided as Customer Furnished Item. Vocabulary and repository provided as Customer Furnished Item.

7.7.20 **Interfaces - GIS to IMS**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.21 **PM Plan - Project Timeline**-The assumptions are based on a presumed start of the project implementation in May 2015.

7.7.22 **IMS Options Paper - User Interface**-Regarding NIN: The governance of Sydney Trains "intranet" is under control of Sydney Trains.

7.7.23 **IMS Options Paper - User Interface**-NIN messages received by REM are considered valid, truthful and trustful and will be passed on towards the IMS incident operator as NIN-Notification without further

7.7.24 **IMS Options Paper - User Interface**-The availability of speakers, headphones or other acoustic devices, used to reply the configured acoustic signals in appropriate quality is outside the responsibility of Frequentis.

7.7.25 **IMS Options Paper - Comms**-It is assumed that the SMS provider is a customer Supplied item.

7.7.26 **IMS Options Paper - Comms**-Frequentis REM offers integration with VCS systems which support ECMS232 for Computer Telephony Interface. We assume that EMCS232 will be supported by the incumbent unified communications layer within the ROC. Any alternative solutions will require additional customisation of the product

7.7.27 **IMS Options Paper - Comms**-Text to Speech Engine will be provided as Customer Supplied Item.

7.7.28 **IMS Options Paper - Comms**-Vocabulary and repository provided as Customer Supplied Item.

7.7.29 **IMS Options Paper - Comms**-It is assumed that the VoiceMail provider is a customer Supplied item.

7.7.30 **Implementation Strategy Stage 1**-The site and system environment for deploying the demonstrator system has to be provided by Sydney Trains or the System Integrator.

7.7.31 **Implementation Strategy Stage 1**-It assumed that email communication shall be supported and that an email server will be provided as Customer Furnished Item.

7.7.32 **Implementation Strategy Stage 2**-The raw data containing the information for building the foundation for the system's productive configuration is available and structured.

7.7.33 **Implementation Strategy Stage 2**-SMEs familiar with the data layout, it's meaning and purpose are available and support the data import process

7.7.34 **Implementation Strategy Stage 2**-It is assumed that email communication shall be supported and that an SMS provider is available. Limitations of SMS provider capabilities need to be considered (e.g. two way communication).

7.7.35 **Implementation Strategy Stage 2**-The connection and availability of a SMS provider is regarded a Customer Furnished Item.

7.7.36 **Implementation Strategy Stage 3**-A DTTS system which provides an interface for the IMS systems available.

7.7.37 **Implementation Strategy Stage 3**-A CIMS system which provides an interface for the IMS systems available.

7.7.38 **Implementation Strategy Stage 3**-The integration will be performed outside the productive environment.

7.7.39 **Implementation Strategy Stage 3**-A test environment able to host all three systems: REM, DTTS and CIMS is available and accessible.

7.7.40 **Implementation Strategy Stage 3**-DTTS and CIMS are configured in a way to allow testing of feasible and realistic use cases.

7.7.41 **Implementation Strategy Stage 3**-In case of missing systems to be integrated (DTTS or CIMS), simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.42 **Implementation Strategy Stage 4**-All legacy systems for integration with the IMS are configured and available.

7.7.43 **Implementation Strategy Stage 4**-In case of missing systems to be integrated, simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.44 **Implementation Strategy Stage 4**-It assumed that CTI integration with the VCS shall be supported.

7.7.45 **Implementation Strategy Stage 4**-It is further assumed that the IMS will gain full access to a non productive VCS environment in order to test the integration.

7.7.46 **Implementation Strategy Stage 4**-It assumed that Voice Mail communication shall be supported and that a Voice Mail provider is available. Limitations of Voice Mail provider capabilities need to be considered (e.g. two way communication).

7.7.47 **Implementation Strategy Stage 4**-It is assumed that a speech engine for creation of Voice Mail messages is available.

7.7.48 **Implementation Strategy Stage 4**-The connection and availability of a Voice Mail provider and an appropriate speech engine is regarded a Customer Furnished Item.

7.7.49 **Licensing**-The capacity of the server installation is based on the following assumptions:

a) Up to 50 concurrent users of REM Incident Management Client;

b) Each operator is concurrently working on up to 5 incidents in parallel;

c) Up to 5 concurrent users of REM Data Management Client;

d) Up to 500 concurrent users accessing the REM Web Access Client;

e) Up to 50 concurrent users of REM Mobile Squad Leader App devices; and

f) Up to 80 concurrent users of REM Notification Sender App devices.

7.7.57 **Pricing**-License prices are based on the scoped amount. A discount has been applied given the number of licences specified. If this amount reduces, the discount will not apply.

7.7.58 **CSI**-All other CSI and responsibilities listed in the PIPP.

7.7.59 **Pricing** – Frequentis efforts have been calculated on the efforts agreed in the PIPP delivered in the High Level Solution Design Phase. If efforts are above and beyond the work originally scoped because of reasons including, but not limited to, contributions to new documents and/or other contractor's deliverables, a Contract Change Variation shall be raised.

7.7.60 **Pricing** – Transformational and Change Deliverables were not a part of the original Frequentis scope. The efforts and contribution to these activities

needs to be analysed in conjunction with the System Integrator. The additional efforts will require a Contract Change Variation or additional payment arrangement.

7.7.61 **Scope** – The final definition of what feature is available in which release needs to be defined in the initial workshops.

7A. Implementation

7A.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the parties.

7A.2 Implementation strategy

7A.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

7A.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Deliverable No.9 in sections 5.4.

7B. Project Management

7B.1 Advice and knowledge transfer

Subject to the exclusions in section 7.6, the Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

7B.2 Contractor assistance

If requested, the Contractor must participate all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Initial Requirements, or if amended the Requirements, are accurate and complete; and

b) the Contractor's proposed solution.

7B.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

7B.4 Risk management

7B.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes Delivery Risks,

(**Issues Register**).

7B.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

7B.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 7B.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the Delivery Risks.

7B.4.4 The Contractor must report to the Customer:

a) Any issues or risks (including any Delivery Risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the Delivery Risks, immediately on becoming aware of that change in status.

7B.5 Cooperation with Other Contractors

7B.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Other Contractors in relation to the Project;

b) without assuming any liability for the contents of an Other Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Other Contractors;

c) comply with all other requests of the Other Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Other Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to an Other Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this clause by the Contractor is accurate and to the extent possible, complete.

7B.6 Communication with Other Contractors

7B.6.1 The Contractor must not, without the Customer's prior written consent:

a) give an Other Contractor a direction or instruction which will or is likely to vary the Other Contractor's scope in relation to the Project;

b) give an Other Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Other Contractor in relation to the Project;

c) give an Other Contractor a direction or instruction which will or is likely to delay the time that the Other Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Other Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Other Contractor in relation to the Services or the Deliverables.

7B.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and an Other Contractor, or between Other Contractors, in connection with the Project.

7B.7 Disputes between the Contractor and Other Contractors

7B.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with an Other Contractor by discussion and negotiation without the Customer's involvement.

7B.7.2 Where the Contractor has notified the Customer under section 7B.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

7B.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

7B.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

7B.8 Reliance on Other Contractors' work

The Customer does not warrant the accuracy or correctness of any unapproved reports, plans, drawings, documents or information provided by Other Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such unapproved reports, plans, drawings, documents or information.

7B.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

7B.10 Delivery Address

7B.10.1 The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

7B.10.2 The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

8. Customer Supplied Items (CSI) and Customer obligations

8.1 CSIs and obligations

8.1.1 Subject to section 8.2, the Contractor acknowledges that the Customer has provided the following CSI items to the Contractor prior to the Contract Date:

a) project scope (as documented in the architecture blueprint);

b) functional requirements (as provided in the RFP);

c) non-functional requirements (as provided in the RFP);

d) draft Implementation & Maintenance Phase PIPP

e) system security requirements;

f) data management strategy;

g) project concept and review;

h) architecture blueprint;

i) systems impacted (existing);

j) interface specifications (where available);

k) technical policies and standards;

l) draft Procure IT (the Customer Contract and this PIPP);

m) ROC organisation structure;

n) ROC program high level roadmap;

o) draft ROC program test management framework;

p) current processes;

q) concept of operations;

r) Transformation and Change Requirements v4.1;

s) ROC Systems Assurance and Planning Framework documents; and

t) ROC Data Architecture High-Level Strategy.

8.1.2 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

8.1.3 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 8.1.1(a) – (t), 8.1.2(a) and 8.2.1.

8.2 CSI Facilities and Equipment

8.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data;

c) all system environments as defined in the document titled "Technical Environment Management Strategy version 9.0";

d) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required and validated data has to be provided in the format required by the Contractor; and

e) desktop equipment for the agreed number of Contractor Personnel working on Site,

8.3 CSI verification

8.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

8.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

8.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

9. Personnel

9.1.1 The Contractor must ensure that each member of the Contractor's Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

9.1.2 Any of the Contractor's Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

9.1.3 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

9.1.4 Nothing in Appendix B affects the scope of the obligations of either party as described in sections 4 and 5 of this PIPP.

10. Subcontractors

10.1 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the Detailed Design Phase workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

11. Approval by the Customer

11.1 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with clause 5 of the Additional Conditions and as per section 5.4 above.

11.2 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

12. Payment Plan

12.1 Contract Price

12.1.1 The Contract Price for the Contractor to complete Detailed Design (Release 1) Phase andInitial Implementation (Release 1) Phase of the ROC program is [redacted] (ex GST).

12.1.2 The Contract Price has been calculated based on the milestones specified in the table below. A breakdown of the Contract Price is as follows:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation Phase and the Detailed Design (Release 1) Phase:			
The Services and Deliverables specified in sections 4 and 5 of this PIPP.	[redacted]	1	[redacted]
Sub-Total Project Preparation Phase and the Detailed Design (Release 1) Phase			[redacted]
Initial Implementation (Release 1) Phase:			
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase (Release 1) Phase until the end of November.	[redacted]	1	[redacted]
Travel Costs	[redacted]	1	[redacted]
Customisation for ROC a) The majority of the customisation efforts can be deferred until 30 November 2015. b) Assumes that remaining customisation efforts will be ordered through the implementation	[redacted]	1	[redacted]

contract until the deferred date.			
License component			
The REM IMS.	[redacted]	1	[redacted]
Sub-Total Initial Implementation (Release 1) Phase			[redacted]
Initial Implementation (Release 1) Phase (CR1)			
Customisation for ROC			
Interface customisation including GAP Features	[redacted]		[redacted]
On/Off-Site Personnel Effort	[redacted]		[redacted]
1 December 2015 to 29 February 2016			
Travel Budget	[redacted]		[redacted]
Sub-Total Initial Implementation (Release 1) Phase (Continued)	[redacted]		[redacted]
CR2			
Licensed Software*	[redacted]		[redacted]
Customisation	[redacted]		[redacted]
Documentation Deliverables	[redacted]		[redacted]
System Administration	[redacted]		[redacted]
Sub-Total Initial			[redacted]

Implementation (Release 1) Phase (CR2)		
	Sub-Total:	[redacted]
	Any Other Charges:	
	GST:	[redacted]
	Total Amount:	[redacted]

*The REM Mobile Software Licences , are only 40% of the full licence price for the respective module due to the reduced functionality required by the Customer for Release 1 only, as described in the DTBRS. Full mobile functionality will be required and be provided for under the Final Contract.

12.1.3 The Contractor is to be paid in accordance with the following milestones

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Detailed Design Deliverables funded as follows:			
	Project Preparation Phase and Detailed Design (Release 1) Phase			
1	Mobilisation payment of 50% (of [redacted] of the Project Preparation Phase and Detailed Design Phase on or about the Effective Date	[redacted]	1	[redacted]
2	25% (of [redacted] on 15th September 2015	[redacted]	1	[redacted]
3	25% (of [redacted] on 15th October 2015	[redacted]	1	[redacted]
	Initial Implementation Phase			

4	Mobilisation payment of 50% (of [redacted] of the Initial Implementation Phase on execution of the Customer Contract.	1	[redacted]
5	25% (of [redacted] on 31 January 2016	1	[redacted]
6	25% (of [redacted] on delivery of Software specified in section 6.4 of this PIPP	1	[redacted]
	Initial Implementation Phase (CR1)		
7	Initial Payment due upon Customer execution of CR1	1	[redacted]
8	Progress Payment due on 31/01/2016	1	[redacted]
9	Progress Payment of due on 29/02/2016	1	[redacted]
10	Final Payment due upon delivery of the REM2016.R1 *	1	[redacted]
	CR2		
11	Total CR 2 upon execution of CR2	**100%**	[redacted]
		Sub-Total:	[redacted]

Any Other Charges:	
GST:	[redacted]
Total Amount:	[redacted]

* The Deliverable for the purpose of this payment is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

12.2 Payment

12.2.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 12.1.3.

12.2.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

12.2.3 The Contractor acknowledges and agrees that, as at the Commencement Date, the Customer has paid the Milestone 1 payment - Mobilisation payment of 50% (of [redacted]) of the Project Preparation Phase and Detailed Design (Release 1) Phase.

12.2.4 In the event that the Final Contract is not executed by 29 February 2016 as a result of any delay to the execution of the Final Contract solely attributable to the Customer, the Parties will negotiate, in good faith, stand-down and re-mobilisation costs.

12.2.5 In the event that the Customer does not enter into the Final Contract or terminates the Customer Contract for convenience, the Parties will negotiate, in good faith, the value of the balance of the cost of the Licensed Software which will be payable to the Contractor.

12.2.6 For the purposes of the Customer Contract, the Contract Price specified in section 12.1.3 is the Contract Value.

12.3 Termination for convenience

12.3.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with clause 15 of the Additional Conditions.

12.4 Liquidated Damages

12.4.1 Liquidated Damages will not be applicable for the Detailed Design (Release 1) Phase or Initial Implementation (Release 1) Phase.

13. Governance

13.1 Authorised Representatives

13.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Mark Pigot; and

b) the Contractor's Authorised Representative is Martin Rampl.

13.2 Management committee

13.3.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Mark Pigot;

b) Stefano Bianchini;

c) Bob Allum;

d) Imola Novak;

e) Martin Rampl;

f) Christian Dorner; and

g) Julian Molzer.

13.3.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

13.3 Management committee function

13.3.1 The function that the management committee is to:

h) review and monitor progress under the Customer Contract; and

i) carry out any other functions stated in Item 16 of the General Order Form.

13.4 Management committee meetings

The management committee must meet no less than once a week during the Project at the times and locations specified by the Customer.

13.5 Management committee progress report

13.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 13.4, provide the Customer with a weekly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

i. minutes and actions from the last meeting;

ii. risks and issues;

iii. details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Initial Requirements and Updated Requirements

Part 1: Initial Requirements

Frequentis Initial Requirements.pdf

Part 2: Updated Requirements

Release 1 Functional Specification for REM Rel 2016.1 v3.0
ROC Release 1 - IMS Architecture Specification v3.00
ROC Release 1 - IMS Integration Specifications v3.0
ROC Release 1 - IMS Product Gap Analysis v5 0
ROC-TEC-SR-0001 V2.0 - Incident Management System R1 DTBRS
ROC-TEC-SR-0001 V2.0 - Incident Management System R1 DTBRS_pdf
SAD IMS v1.0 Published

Release 1 Functional Specification for REM

ROC Release 1 - IMS Architecture Specifica

ROC Release 1 - IMS Integration Specificat

ROC Release 1 - IMS Product Gap Analysis

ROC-TEC-SR-0001 V2.0 - Incident Management System R1 DTBRS_pdf (attached as separate pdf document)

SAD IMS v1.0 Published.pdf

Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Julian Molzer	Project Manager	a) Overall successful performance of the project within schedule and budget; b) Overall project management activities (planning, organising, controlling); c) Participation and action item processing for Project Management related topics with the Customer and System Integrator; d) Production of Weekly Status Reports, including the Project Highlight Reports; e) Attending Management Committee Meetings; f) Managing the Contractor team on-site/off-site; g) Managing Change Requests; h) Risk management – DRICA; i) Facilitating cooperation with the Other Contractors; j) Management and execution of all Project related communication between the System Integrator, CNS and the Contractor (including alignment meetings and technical clarification)
Bjoern Brunner	Solution Architect	a) Participation and action item processing in workshops with the Customer and System Integrator; b) Solution design; c) Architectural consultancy; d) Master Data mapping support; e) Support of integration and integration validation.
Armin Steinwandter & Peter Hauk	Solution Consultant	a) Solution Consultance Support (Solution Consultant) ; b) Participation and action item processing in workshops with the Customer and System Integrator; c) Product & Solution consultancy; d) Data provisioning support; e) Data management and configuration support

Bjoern Brunner	Requirements. & Test Manager	a) Co-ordination of all requirements, engineering and test activities for the Project; b) Preparation of all Acceptance Test activities.
Maria Schwarzenauer	Project Manager CNS	c) CNS project management activities (including planning, organising and controlling) d) Management and execution of all Project related communication within CNS (including technical alignment meetings and technical clarification)
Robert Devide	Requirements Manager off-site	Requirements engineering for REM2016.1.R1development off-site
Monika Blassnig	Quality Manager	Quality assurance of the Project Deliverables as well as ensuring that the Configuration Management guidelines are known and met by the Project team.
Bruce Evans	System Engineer	a) Support of System Integrator's system administration activities for Demo, Dev, SAT, SIT, UAT, Training environments until handover to the Customer; b) Master Data Import / Export (on-site).
Monika Bassnig	Configuration Manager	Identification, direction and co-ordination of the Configuration Management activities.
Alexander Bruckner	Product SW Lead	Software configuration and development in response to the requirement specifications
Bruce Evans	Test Engineer	Support Test Manager (creating, performing test cases, test documentation)
Daniel Turner	System Engineer	System Installation / Integration
Alistair McGill	Account Manager	Responsible for customer relationship management
Martin Rampl	Commercial Manager	In charge of negotiating the contract and all modifications thereto on the part of the contractor
Swdorny Veliyath	Technical Trainer	Preparation and provision of system administrator and application administrator training.

Thomas Karl	Internal Project Sponsor Frequentis	Accountable for the overall Project success towards the Contractor's executive board and participant of the ROC steering committee.
Reinhard Sollböck	Internal Project Sponsor CNS	Accountable for the success of the CNS project share towards the Contractor's executive board.

2 Customer roles and responsibilities

Name	Role	Responsibility
Mark Pigot	Technology Team Manager	Management of the Technology Team
Stefano Bianchini	Lead Architect	Oversight of Technical Design for ROC Program
Bob Allum	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Imola Novak	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
As required	Sydney Trains Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

Phases to deliverables	Baseline End Date
1. Updated High Level Solution Design	16th October 2015
2. Release 1 Architecture Specification	27th October 2015
3. Release 1 Functional Specification	27th October 2015
4. Release 1 Non-Functional Design	27th October 2015
5. Release 1 Integration Specification	27th October 2015
6. Project Communication Plan for Release 1	4th September 2015
7. Release 1 Data Management Plan	11th September 2015
8. Release 1 Data Technical Analysis Outputs	27th October 2015
9. Updated Technology Implementation Strategy	22nd September 2015
10. Release 1 Technology Implementation Plan (Template)	1st October 2015
11. Technology Test Strategy	11th September 2015
12. Updated Project Management Plan	14th September 2015
13. RACI	28th August 2015
14. Agreed Final Contract	25th September 2015
15. Detailed implementation & Maintenance Phase PIPP	24th September 2015
16.	
17. Updated Release 1 Product Gap Analysis	28th October 2015
18. Release 1 System Test Plan	15th October 2015
19. Requirement's Traceability Matrix for Release 1	15th October 2015
20. Technology Environment Management Strategy	18th September 2015
21. Operating Model	29th September 2015
22. Draft recommended ROC Organisational Structure	30th September 2015
23. Change Impact Analysis (Release 1)	9th October 2015
24. Release 1 Training Needs Analysis	23rd October 2015

25. REM System Software Delivery Stage 2016.R1	30 April 2016
26. REM 2016 R1 including REM Mobile 2016.R1.	31 May 2016
27.	
28. Test Documentation*	31 May 2016
29. Interface Documentation*	31 May 2016
30. Data Model Documentation*	31 May 2016
31. System Administration Training Material*	31 May 2016
32. User Manuals*	31 May 2016
33. Updated Implementation Strategy	31 Aug2016
34. Updated Architecture Specification	31 Aug2016
35. Updated Functional Specification	31 Aug2016
36. Updated Integration Functional Specification	31 Aug2016
37. Updated Release 1 Data Technical Analysis Outputs	31 Aug2016
38. Updated Data Management Plan	31 Aug2016
39. Updated Project Management Plan	31 Aug 2016
40. Release 1 Technology Implementation Plan	24 June 2016
41. Test Procedure Book (REM Mobile 2016.R1)*	15 May 2016
42. Test Objective Matrix for SAT (REM Mobile 2016.R1)	15 May 2016
43. Functional Specification (REM Mobile 2016.R1)*	22 April 2016
44. GAP Analysis (REM Mobile 2016.R1)*	21 March 2016
45. User manual (REM Mobile 2016.R1)*	31 May 2016

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract.

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

The overall risk management process to be applied can be summarised in the figure below.

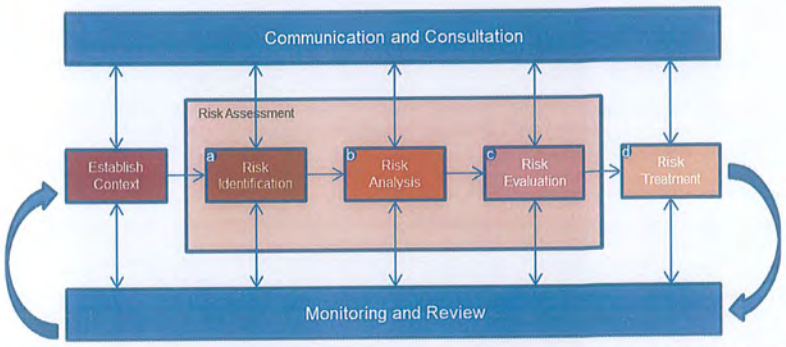


Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

Appendix E - Acceptance Form.do

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The "doer" creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one "A" can be assigned to an action. Also known as the "Owner" of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. "In the Loop"
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. "Keep in the Picture"

Phase	Document Name	Contractor	System Integrator	Customer
Detailed Design (System Integrator and Contractor) Release 1				
	Updated High Level Solution Design	R	A,R	C
	Release 1 Architecture Specification	R	A	C
	Release 1 Functional Specification	R	AR	C
	Release 1 Non-Functional Design	R	AR	C
	Release 1 Integration Specification	R	A,R	C
	Project Communication Plan for Release 1	C	A,R	C
	Operating Model	R	A	C
	Change Impact Analysis (Release 1)	R	A,R	C

Phase	Document Name	Contractor	System Integrator	Customer
	Release 1 Training Needs Analysis	R	A,R	C
	Draft recommended ROC Organisational Structure	R	A,R	R
	Release 1 Product Gap Analysis	R	A	I
	Release 1 Data Management Plan	R	A	C
	Release 1 Data Technical Analysis Outputs	R	A	R
	Updated Implementation Strategy	R	A	C
	Release 1 Technology Implementation Plan (Template)	R	A	C
	Technology Test Strategy	R	A	C
	Updated Project Management Plan	R	A,R	C
	RACI	C	A,R	C
	Agreed Final Contract	I	A	R
	Detailed Implementation & Maintenance Phase PIPP	I	A	R
	Release 1 System Test Plan	A	R	C
	Requirements Traceability Matrix updated for Release 1	R	A,R	C
	Technology Environment Management Strategy	R	A,R	C
Initial Implementation (Release 1) Phase (Contractor & Other Contractor)				
	REM System Software Delivery Stage 2016.R1			
	REM 2016 R1 Licensed Software including REM Mobile 2016.R1.	A,R	C	C
	Test Documentation *	A,R	C	C
	Interface documentation*	A,R	C	C
	Data model documentation*	A,R	C	C
	System Administration Training material*	A,R	C	C

Phase	Document Name	Contractor	System Integrator	Customer
	User manuals*	A,R	C	C
	Updated Implementation Strategy	C	A,R	C
	Updated Architecture Specification	R	A,R	C
	Updated Functional Specification	R	A,R	C
	Updated Integration Specification	R	A,R	C
	Updated Release 1 Data Technical Analysis Outputs	C	A,R	C
	Updated Data Management Plan	R	A,R	C
	Updated Project Management Plan	C	A,R	C
	Release 1 Technology Implementation Plan	R	A,R	C
	Test Procedure Book (REM Mobile 2016.R1)	A,R	C	C
	Test Objective Matrix for SAT (REM Mobile 2016.R1)	A,R	C	C
	Functional Specification (REM Mobile 2016.R1)*	A,R	C	C
	GAP Analysis (REM Mobile 2016.R1)*	A,R	C	C
	User manual (REM Mobile 2016.R1)*	A,R	C	C

* Denotes Deliverables expected to be delivered by the Contractor to the Customer under the Final Contract.

Appendix G – Acceptance Criteria

Approval Criteria for Project Preparation Phase

The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

Approval Criteria for Detailed Design (Release 1) Phase

Standard List of Approval Criteria

The Approval Criteria for the following Deliverables of Detailed Design (Release 1) Phase are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase;

b) where the Deliverable is a document, that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (section 5.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design (Release 1) Phase, following the completion of the initial Customer/ Contractor workshops.

Approval Criteria for the Initial Implementation (Release 1) Phase

The Approval Criteria for the following Deliverables of Initial Implementation (Release 1) Phase are as follows:

a) where the Deliverable is a document, that all sections of the document are complete;

b) the Deliverable meets the criteria listed in the Deliverables section (section 6.4 of the PIPP), where stated;

c) if applicable to a document, the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

d) there are no outstanding major defects from the review of the deliverable; and

e) where the Deliverable is REM 2016.R1, receipt by the Customer of REM 2016.R1 on physical media shall occur at delivery of the executable software on physical media to the Customer. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

Attachment 2 - Updated Module 3 Order Form

MODULE ORDER FORM
MODULE 3 – LICENSED SOFTWARE

Box 1 Approved Purpose

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.1)	
Specify what purpose is the Licensed Software used for. If no other purpose is specified in this Box the Approved Purpose is the internal processing of the Customer's own data.	The Approved Purpose extends to use of the Licensed Software for the internal processing of the Customer's own data, as well as the data of Transport for NSW, NSW Trains and RailCorp.

Box 2 Class of Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.2)	
Specify the specific rights that are granted by the Contractor to the Customer to use the Licensed Software. The Class of Licence defines the Price, e.g. If the Licensed Software is licensed for X "Named Users", the Class of Licence must define what a "Named User" is. Examples of the types of issues that are included in the Class of Licence include: (a) the Licence Period; (b) number and type of user; (c) number, type or capacity of Hardware; or (d) any other licence restriction/right. Also specify whether the Customer is granted the right to transfer the Licensed Software to an outsourcer in accordance with clause 2.17. [Note: If this Box is not completed then the Contractor grants the Customer the default rights to use the Licensed Software and User Documentation as described in clauses 2.2 and 2.9 of Module 3.]	**REM Server Licences** Each Instance/Server • ICM Platform Licence - 2 licenses (main and backup site) • Application Server Licence – 4 licenses (two redundant servers per site) • Web Server Licence - 4 licenses (two redundant servers per site) • REM Mobile Server Licence – 4 Licences (two redundant servers per site) **REM Gateway Licences** Each Server/Client • Incident Information Exchange-Gateway - Gateway - 4 licenses (two redundant servers per site) • Email-Gateway - 4 licenses (two redundant servers per site) • SMS-Gateway - 4 licenses (two redundant servers per site) **REM Extension Licences** Each Instance • Notifications Module – 2 instances • Document Management Module – 2 instances **REM Client and User Licences** Each Working Position/Client/User

	• Data Management Client – 5 working positions (node locked) • Incident Management Client – 50 working positions (node locked) • Named User – 2200 named users (incident management client/data management client/we client) • REM Mobile Notification Sender App – Up to 500 devices (licenced per device) **Definition Named User:** Named user is an active entry in the list of users maintained in the REM DMC Client.

Box 3 Designated Equipment

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.3)	
Specify the hardware platform/operating system combination upon which the Licensed Software is installed. [Note: Specify the type and version number of the operating system and capacity/model of the Hardware, especially if the Class of Licence is based on type or size of capacity of the Hardware.]	Use of the Licensed Software is not limited to any Designated Equipment for purposes of clauses 2 or 3 of Module 3. However, the parties will agree hardware and operating system requirements for the Licensed Software which will be the Designated Equipment for purposes of clause 8 of Module 3. For the purposes of the Initial Implementation (Release 1) Phase only, the supported operating systems for REM Mobile Server and REM Mobile Notification Sender App (**REM Mobile**) are iOS 8.4 and iOS 9 (iPhone 4s or later). The Parties will agree the operating system requirements for REM Mobile beyond the Initial Implementation (Release 1) Phase and document such requirements in the Final Contract.

Box 4 Third Party Components

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.14)	
Third Party Components Specify if the details of any software components, plug-ins and other programs are owned by third parties. This should include name and version number of each Third Party Component.	The Licenses in Box 2, are owned by CNS Solutions & Support GmbH. Both CNS Solutions & Support GmbH and the Contractor are wholly owned subsidiaries of Frequentis AG. Accordingly, the Third Party Components are supplied by the Contractor as part of the

	Licensed Software.
Specify if the Third Party Components are supplied by the Contractor: (a) as part of the Licensed Software; or (b) as a Reseller (in which case Box 11 must be completed) [Note: See clause 2.7 for details.] [Note: Open source software is not included within the definition of Third Party Component.]	

Box 5 Extension of Period to Notice to Renew Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Licence Period (clause 2.6(a))	
If the Licence is not perpetual, then specify the number of days written notice prior to the end of each current Licence Period that the Contractor must give of the Price, payment arrangements and/or terms for any extended Licence Period or new Licence Period that is to commence immediately after the end of the current Licence Period. If no period is specified in this Box, the period is 30 days.	Not applicable. The Licence ~~(REM-2016.1)~~ is a perpetual ~~license~~licence.

Box 6 Installation

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Installation (clause 3.1)	
Specify if the Contractor is responsible to install the Licensed Software.	Not Applicable. Support of integration and installation activities are not a part of the Services and Deliverables under this Customer Contract. These services and deliverables will occur in the Implementation & Maintenance Phase and will be governed by the Final Contract.
If the Contractor is responsible for installation of the Licensed Software: (a) specify the details of the Installation and the date of	Not Applicable.

installation; and (b) specify the Price for the installation, and when the Price is due.	
Installation (clause 3.3)	
Specify the date by which the access codes must be made available, if applicable. If a date is not specified, the access codes must be provided promptly following the date the Parties enter into the Customer Contract.	The REM system and codes must be delivered by the Contractor to the Customer at the end of the REM product release cycle, being 30 April 2016.

Box 7 First Release

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
First Release (clause 3.9)	
Specify if the Licensed Software or any New Release will be a First Release. If so, specify the any additional terms and conditions that apply to the First Release. If this Box is not completed, the Licensed Software and each New Release is deemed not to be a First Release.	Not Applicable.

Box 8 Right to Receive Updates and/or New Releases

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Updates and New Release (clause 4.1)	
Specify if the Contractor provides the Customer the rights to receive: (a) Updates; (b) and/or New Releases, as part of the Licence (as opposed to part of a separate Software Support Service under Module 5).	Not Applicable. Updates and New Releases will be provided as Services and Deliverables under the Implementation & Maintenance Phase and will be specified in the Final Contract.
Updates and New Release (clause 4.4(c))	

Specify the increased Licence Price when the Customer accepts the Update or New Release. If an increased Price is not specified, the Licence Price must not be increased for any Update or New Release provided during the Licence Period.	Not Applicable. Updates and New Releases will be provided as Services and Deliverables under the Implementation & Maintenance Phase and will be specified in the Final Contract.

Box 9 Warranties for Open Source Code

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Open Source Software (clause 5.2(b))	
If the software is Open Source Software: (a) specify the Open Source Licence that governs the use of the open source software; (b) specify whether the open source software is provided with the warranties that the Contractor provides in respect of Licensed Software, or whether the Contractor provides the open source software without any warranty (to the extent permitted by law)	The Parties acknowledge and agree that any Open Source Software incorporated in the Licensed Software will be governed by the terms and conditions of the Final Contract.

Box 10 Ancillary Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Training (clause 6.1)	
Specify if training services are to be provided.	The Contractor must provide system administrator training and application administrator trainings during the Contract Period in order to enable the Customer's Personnel to configure the Licensed Software. Further detail in relation to the training services to be provided by the Contractor is set out in section 6.3 of the PIPP.
If so, specify details, dates and the Prices of the training services, and when payment is due.	The scope of the system administrator training and application administrator trainings is to be clarified during the Detailed Design Phase. The Contractor acknowledges and agrees that the Contract Price includes a cost for providing the

	system administrator training and application administrator trainings. Further detail in relation to the training services to be provided by the Contractor is set out in section 6.3 of the PIPP.
Other Services (clause 6.2)	
Specify the details, times, Prices for ad hoc issue resolution or support service for the Licensed Software, and when payment is due. [Note: If Software Support Services are being provided for the Licensed Software under Module 5, do not complete this Box.]	Not Applicable.

Box 11 Business Models of the Reseller

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Reseller Provision of Licensed Software (clause 7.1)	
Are any of the Deliverables being provided by the Contractor in the capacity as a Reseller? If yes: (a) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller as Facilitator. [Note: Reseller as Facilitator means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(a).]	Not Applicable.
OR	
(b) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller with Pass Through Warranties. [Note: Reseller with Pass Through Warranties means the Contractor is	

acting in a particular role and has a particular set of responsibilities described in clause 7.1(b).]	

Box 12 Value Add Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Acquisition through a Reseller (clause 7.3)	
Specify if the details of any value add services the Contractor is to provide, the Prices and when payment is due.	Not Applicable.

Box 13 Customer Maintains Records

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Records (clause 10.1(a))	
Specify if and, if so, how the Customer must maintain records as to the locations of all copies of the Licensed Software and the usage of the Licensed Software.	Not Applicable. Records requirements will not apply until the Implementation & Maintenance Phase and will be specified in the Final Contract.
Records (clause 10.1(b))	
Specify the frequency that the Customer provides copies of the records under clause 10.1(a). If this Box is not completed the Customer must provide copies of the records ever six months.	Not Applicable.

ANNEXURE B TO THE CUSTOMER CONTRACT

Schedule 12: PIPP

1. Introduction

1.1. The Customer is establishing a new Rail Operations Centre (ROC).

1.2 The Customer wishes to implement new technologies at the ROC which will provide enhanced capability to improve key 'day of operations' processes (the ROC Technology Solution).

1.3 The ROC Technology Solution consists of the development of four new technology systems (or system capabilities). These systems include:

a) Day of Operations Timetable System (DTTS);

b) Incident Management System (IMS);

c) Customer Information Management System (CIMS); and

d) Operational Visual Display System (which will be tendered at a later date).

1.3A The Contractor has been selected as the contractor responsible for the Services and Deliverables specified in this PIPP in respect of section 1.3(b).

1.4 By implementing the ROC Technology Solution the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail – Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay -** Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15 % by 2018.
Increased operational performance and opportunity for timetable enhancements – Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay** – Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the service back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The program shall reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer	**Reduced Customer Perceived Delay -** Improvements to the timeliness, relevance and consistency of customer

information during delays – Improving the customers' ability to make decisions about their transport options.	information, particularly during disruption, will reduce the customer's perceived time of their journeys by 11% by 2018.
Better realising the benefits of future investments in rail capacity – Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function -** The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc.). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC Infrastructure design requirements.
A new world class operating centre and culture – Transforming the way 'day of operations' activities are managed within Sydney Trains, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment -** The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service – Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX -** The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability – Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX -** enabled by new systems, process improvements and colocation.

(together, the ROC Technology Solution Objectives).

1.5 To allow the Customer to better evaluate the Contractor's Solution for the ROC Technology Solution, the Customer wishes to engage the Contractor to undertake the Services and Deliverables specified in sections 4, 5 and 6 of this PIPP including, among other things, the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase (the **"Project"**).

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of the Project.

1.7 The sequence of the ROC Technology Solution has been staged as follows:

a) the RFP which solicited the solution being proposed by the Contractor;

b) the High Level Solution Design Phase which assessed the veracity of the proposed solution and the capability of the Contractor. The Deliverables of the High Level Solution Design Agreement represent the core documents required by the Contractor to provide the Detailed Design Deliverables;

c) the Project which is undertaken during the Detailed Design Phase; and

d) subject to the Customer's acceptance of the Contractors performance and related Deliverables under the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase (including negotiation of a Final Contract that may encompasses a number of the obligations of this Customer Contract) the Customer may, at its sole discretion, notify the Contractor of its intention to transition to the Final Contract. In such situation, this Customer Contract will lapse concurrently to the commencement of the Final Contract in accordance with clause 18.4 of the Additional Conditions.

1.8 On or around 10 August 2015 the Parties entered into a letter of intent (**LOI**) under which the Contractor supplied certain services and deliverables (**LOI Deliverables**) that are within the scope of the Deliverables that are to be supplied under this Customer Contract. The Parties acknowledge and agree that:

a) the LOI has been superseded by this Customer Contract and the LOI is of no further effect:

b) any sums paid under the LOI are taken to have been paid under this Customer Contract;

c) the terms of this Customer Contract apply to the LOI Deliverables; and

d) the LOI Deliverables are deemed to have been supplied under this Customer Contract and are Deliverables for the purposes of the Customer Contract.

2. Overview of scope of work and Project delivery model

2.1 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional services and deliverables agreed by the parties as the responsibility of the Contractor;

b) perform all other services functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i. reasonably related to the services or deliverables described in this PIPP; or
ii. reasonably required for the supply of the Deliverables described in this PIPP; and

c) complete the Project, and supply the Services and Deliverables in the following phases:

i. the Project Preparation Phase;
ii. the Detailed Design (Release 1) Phase; and
iii. the Initial Implementation (Release 1) Phase

3. Definitions

Capitalised terms which are not defined in this document have the meaning given to them in the Order Form or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

Acceptance Criteria means the criteria set out in Appendix G.

Build Phase means all activities required to deliver the Solution under the Final Contract

CIMS has the same meaning given to that term in the Additional Conditions.

CNS means CNS Solutions and Support GmbH;

Contract Price has the meaning given to that term in section 12.1.1 of this PIPP.

Delivery Risks means the actual or potential problems, issues or risks that may adversely affect the Contractor's ability to perform its obligations relating to the Project or the ROC Technology Solution.

Detailed Design means the Contractor's design of its Solution that has been developed as a Deliverable under the Customer Contract including the Detailed Design Documents.

Detailed Design Document means each document that is developed by the Contractor as part of the Detailed Design Phase and approved by the Customer.

Detailed Design Phase means the phase of work that includes the Detailed Design (Release 1) Phase and work associated with Release 2 and Release 3.

Detailed Design (Release 1) Phase means the phase described in section 5 of this PIPP.

Dispute means any dispute or disagreement between the Contractor and an Other Contractor (or a dispute between Other Contractors) arising out of or in connection with the Project. A reference to a Dispute, where the Dispute is partly resolved, refers to the unresolved part of the Dispute.

DTBRS means Detailed Technical Business Requirements Specification, as set in Appendix A (Part 2) of this PIPP;

DTTS has the same meaning given to that term in the Additional Conditions.

Effective Date means the date the Contractor undertook early services under the letter of intent dated 10 August 2015

Environment has the same meaning as 'Customer Environment' in the Additional Conditions.

Entry Criteria means for a phase, the criteria that must be met before the Contractor is entitled to commence the work for that phase, as set out in this PIPP.

Final Contract has the same meaning given to that term in the Additional Conditions.

High-Level Design has the same meaning as the term in the Additional Conditions.

High Level Solution Design Agreement means the contract entered into between the Customer and the Contractor for the design services (which includes the High-Level Design) on or about 24 December 2014.

High Level Solution Design Documents means each document (including the High-Level Design) that is developed by the Contractor as part of the High Level Solution Design Phase and approved by the Customer as CSI.

High Level Solution Design Phase means the phase preceding the Detailed Design Phase.

Implementation & Maintenance Phase means the phase, if the Contractor is selected, for the implementation and maintenance of the Solution.

Initial Implementation (Release 1) Phase means the phase described in section 6 of this PIPP.

IMS has the same meaning given to that term in the Additional Conditions.

Initial Requirements means the requirements set out in Appendix A (Part 1) of this PIPP

Issues Register has the meaning given to that term in section 7B.4.1 of this PIPP.

Milestone Acceptance Form means the acceptance forms in the same or substantially the same form as Appendix E.

Other Contractors has the same meaning as 'Interfacing Contractor' in the Additional Conditions.

PCAR means the Project Concept and Review document, as set out in Appendix A (Part 2) of this PIPP.

Personnel means, as applicable, any director, officer, employee, agent, contractor, sub-contractor or professional advisers engaged in, or in relation to, the performance or management of the Customer Contract.

Project has the same meaning given to that term in section 1.5 of this PIPP.

Project Preparation Phase means the phase described in section 4 of this PIPP.

Project Schedule means the schedule set out in Appendix C which sets out the delivery dates for the Services and Deliverables during the Detailed Design Phase.

Release 1 means the implementation of and integration of IMS into the Customer's legacy environment.

Release 2 means the implementation of and integration of CIMS and DTTS into the Customer's legacy environment.

Release 3 means the integration of IMS, CIMS and DTTS systems with one another in the Customer's environment.

REM IMS means Rail Emergency Management Information Management System.

REM Mobile 2016.R1. means the mobile functionality included in REM 2016.1R1 under Change Request 2, as described in the DTBRS.

REM Mobile Software means the items of Licensed Software set out in the Module 3 Order Form required for REM Mobile 2016.R1.

REM 2016.1R1 means the Licensed Software upgraded by the Contractor to reflect the Customer's Requirements as described in the Technical Documents and includes REM Mobile 2016.R1.

Requirements means the Initial Requirements as updated by the Updated Requirements.

Requirements Variation has the meaning given to that term in section 7.2.1 of this PIPP.

RFP has the same meaning given to that term in the Additional Conditions.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC Technology Solution has the meaning given to that term in section 1.2 of this PIPP.

SAD means the Solution Architecture Document, as set out in Appendix A (Part 2) of this PIPP.

Solution has the meaning given to that term in section 7.1.8 of this PIPP.

System Integrator means Ajilon Australia Pty Ltd (ABN 25 076 517 354).

Technical Documents means the following Documents set out in Appendix A (Part 2) of the PIPP:

a) Release 1 Architecture Specification for REM Rel 2016.1 V3.0;

b) Release 1 Functional Specification for REM Rel 2016.1 V3.0;

c) Release 1 Integration Specification for REM Rel 2016.1V3.0; and

d) Updated Release 1 Product Gap Analysis (High level business requirements) V5.0.

Updated Requirements means the Initial Requirements that are updated in the Detailed Design, including the Technical Documents, SAD and DTBRS.

4. Project Preparation Phase

4.1 Overview and purpose of Phase

4.1.1 The purpose of the Project Preparation Phase is to validate the Contractor's strategic intent and the Solution scope.

4.1.2 During the Project Preparation Phase, plans and schedules are prepared and Project resources committed.

4.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Project Preparation Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Project Preparation Phase are approved by the System Integrator,

on or before relevant date(s) specified in the Project Schedule.

4.2 Entry Criteria

4.2.1 The Entry Criteria for the Project Preparation Phase is specified in the table below:

#	Criteria	Description
1.	Customer Contract execution	The Contractor and the Customer have executed the Customer Contract.
2.	Acceptance of High Level Solution Design Deliverables	The Customer has accepted the Deliverables submitted under the High Level Solution Design Agreement or, where conditional acceptance was provided by the Customer, the Contractor has initiated remediation of the conditionally accepted Deliverables.
3.	Personnel	The Contractor provides details of the Contractor Personnel proposed for the Detailed Design (Release 1) Phase, as well as the Final Contract.

4.3 Services

4.3.1 The Contractor must supply the following Services as part of the Project Preparation Phase:

#	Description
1.	Prepare for Project kick-off, including: a. engaging the Personnel with the required skill sets to perform the Contractor's

	obligations under this PIPP; and b. collating and confirming the names and contact details of those Personnel with the Customer.
2.	All things necessary to prepare for the workshops to be conducted in the Detailed Design (Release 1) Phase, including: a. planning for the Detailed Design (Release 1) Phase workshops; b. assigning the Personnel with the required skill sets to facilitate the Detailed Design (Release 1) Phase workshops; c. requesting Customer Personnel based on required skill sets to attend Detailed Design (Release 1) Phase workshops; and d. preparing materials to facilitate the Detailed Design (Release 1) Phase workshops.
3.	Assess (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project and the ROC Technology Solution) and identify: a. any issues; and b. risks that may arise during the course of the Project and the ROC Technology Solution.
4.	Review and update the Issues Register to accurately and comprehensively identify all of the issues and risks that the Customer has identified relating to the Project and the ROC Technology Solution.
5.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Project Preparation Phase.
6.	Provide a list of technical requirements for Detailed Design (Release 1) Phase (e.g. remote access).
7.	Participate in the Customer's induction training or other courses as may be required, from time to time.
8	All things necessary to develop and supply the Deliverables described in section 4.4.

4.3.2 The Contractor must supply the Services which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.4 Deliverables

4.4.1 The Contractor must supply the following Deliverables as part of the Project Preparation Phase:

#	Deliverable	Description	Approver
1.	Detailed Design (Release 1) Phase workshops and planning documents	The following materials required to participate in the workshops required during the Detailed Design (Release 1) Phase. a. workshops and playback schedules; b. Project Schedule (including delivery dates for each Deliverable); c. pro forma workshop agenda;	The Customer (or its nominee)

		d. list of Contractor participants; and e. list of Customer participants roles.	
2.	Templates and Standards	Agreement of Detailed Design documentation templates to be used by the Contractor.	The Customer (or its nominee)
3.	Detailed Design Phase Deliverables	Finalisation of the agreed list of Detailed Design (Release 1) Phase Deliverables that were conditionally accepted by the Customer during the High Level Solution Design Phase.	The Customer (or its nominee)
4.	Personnel	The Customer must approve the list of Specified Personnel proposed for the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase	The Customer (or its nominee)

4.4.2 The Contractor must supply the Deliverables which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.5 Customer approval

4.5.1 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Project Preparation Phase in accordance with Additional Condition clause 5.

5. Detailed Design (Release 1) Phase

5.1 Overview and purpose of Detailed Design (Release 1) Phase

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design all of the Requirements (based on the Initial Requirements) and develop Detailed Design(s) for Release 1 of the ROC Technology Solution.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase are approved by the Customer (or its nominee),

on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Previous Phase Discharged	All Services that the Contractor is required to supply during the Project Preparation Phase have been supplied.
2.	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
1.	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Contractor as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensure all required Contractor Personnel are present at the meeting(s); c. chairing and presenting the Project meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtain participant approval of contents.
2.	Participate in all necessary workshops with the Customer, the System Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes in those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
3.	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
4.	Develop a Detailed Design for the ROC Technology Solution for Release 1.
5.	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Contractor's configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of the ROC Technology Solution Release 1 to be implemented is understood by all parties.
6.	Conduct a risk management workshop with the Customer, the System Integrator and all relevant Customer stakeholders to identify and agree on risks to the ROC Technology Solution Release 1.
7.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Detailed Design (Release 1) Phase.
8.	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project) to enable the Other Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4.

9.	All other things necessary to develop and supply the Deliverables described in section 5.4 and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Deliverables

5.4.1 The Contractor is responsible for the following Deliverables with appropriate input from the System Integrator. Refer to the Appendix F for allocation of accountabilities and responsibilities.

5.4.2 The Transformation and Change Deliverables (as specified below in section 5.4.4.) are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Contractor during the High Level Solution Design Phase.

5.4.3 Where the Contractor must contribute to a Deliverable specified in section 5.4.4, the Contractor must work with, contribute to and provide all reasonable assistance requested by the System Integrator to complete the relevant Deliverable.

5.4.4 The Contractor must, in collaboration with the Other Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase:

#	Deliverable	Description	Approval
Technology Deliverables			
1.	Updated High Level Solution Design	Contribute to the updating of the High-Level Design Deliverable being developed by the System Integrator. The Updated High Level Solution Design must be updated to reflect the findings by the Contractor and System Integrator during the Detailed Design (Release 1) Phase and be based in the High Level Design submitted by the Contractor during the High Level Solution Design Phase.	The Customer (or its nominee)
2.	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms & technology required to deliver the functional & non-functional requirements. The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. Document Overview; b. Document Inputs; and c. Phase Scope; Systems architecture: a. High Level Conceptual Overview; b. Level 2 Business Processes;	The Customer (or its nominee)

		c. Application Usage View; d. System Integration View; e. Application Structure View; f. Information Architecture (including Reference data requirements); g. Infrastructure Usage View; h. Implementation and Deployment View; and i. Manual Integration; Rationale and justification for detailed design architectural approach: a. Rationale; b. Architecture Risks; c. Architecture Issues; d. Architecture Constraints; e. Architecture Assumptions; f. Architecture Decisions; and g. Architecture Dependencies;	
3.	Release 1 Functional Specification	The Release 1 Functional Specification defines the system's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS that shall be developed by the Customer during Detailed Design. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)
4	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1 Phase. The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability;	The Customer (or its nominee)

		e. manageability; f. performance; g. portability; h. reliability; i. reporting; j. scalability; k. security; and l. usability.	
5.	Release 1 Integration Specification	The Release 1 Integration Specification describes the high level integration points between the REM IMS and other systems. A detailed interface specification for each interface will be created by the Systems Integrator during the Build Phase. The following subjects are included in the Release 1 Integration Specification, one entry for each integration service : a) high level data flows between applications to support the business processes; b) data objects required by consumer – request; c) data objects available from consumer – response; and d) data object transformations required. The Release 1 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each interface to be created by the Systems Integrator during the Build Phase will describe the relevant Acceptance Criteria for each interface.	The Customer (or its nominee)
6.	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)
7.	Release 1 Data Management Plan	This document defines: a) the design, build, control and data management activities required to ensure	The Customer (or its nominee)

		data quality of all data (reference data, master data and transactional data) within REM IMS, based on business rules provided by the Customer, and effective and efficient system integration of REM IMS with other Customer systems; b) a high-level approach to management of all data within REM IMS which aligns with the approach outlined in the SAD.	
8.	Release 1 Data Technical Analysis Outputs	Contribute to Release 1 Data Technical Analysis Outputs must include: a. Data Requirement Classifications (Master data, Migration Data, BI data); b. Data Migration Requirements and Rules; and c. Data quality definition (at data attribute levels). Release 1 Data Technical Analysis Outputs also includes: 1. for each type of reference data and master data used by REM IMS (as appropriate): a) the real-world object type represented by that data set; b) the recommended data maintenance method(s) in REM IMS; c) the relevant SME(s), functional owner(s), source of requirement and/or Customer source from which the data may be obtained; d) whether REM IMS can play the role of DMA source for that data; e) the volatility of that data; and f) data translations (if any) required to integrate with existing Customer systems 2. for each type of master or reference data requested by REM IMS from other Customer systems: a) what data is required in the request and response messages; b) the business rules governing each message; and c) how those business rules are enforced; 3. for each type of transactional data flowing between REM IMS and another system (in either direction): a) the source and target systems; b) the message type and message header type; c) any encryption, security or certification considerations; d) the methods used to handle non-compliant data in the source system; e) any record selection filters required; and f) any record level transformations required.	The Customer (or its nominee)
9.	Updated Technology Implementation	Contribute to the development of the Updated Technology Implementation Strategy being developed by the System Integrator. The Updated	The Customer (or its

	Strategy	Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the ROC Technology Solution, including, at a minimum: a. personnel & organisation; b. implementation approach, including: i. releases; ii. system verification and validation; iii. system change management; iv. release & deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for 'go-live'; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function. .	nominee)
10.	Release 1 Technology Implementation Plan (Template)	The Release 1 Technology Implementation Plan (Template) will be developed and agreed. The plan will outline the plan approach for the roll out of the relevant components for Release 1. The final version of Release 1 Technology Implementation Plan will be developed during the Build Phase and provide a detailed plan and schedule of activities to deploy the Solution into the Environment. It must address training, development of, and installation of the REM IMS into the Environment, cutover and roll back. Note: The final version must be provided at least 40 Business Days prior to the anticipated deployment date for Release 1.	The Customer (or its nominee)
11.	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the System Integrator. The Technology Test Strategy refers to the program test framework and must include the following:	The Customer (or its nominee)

		a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability. Assumptions, test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document Revision & History; and i. Approvals.	
12.	Updated Project Management Plan	Contribute to the development of the Updated Project Management Plan (UPMP) being developed by the System Integrator. The UPMP shall be based on the project management plan submitted by the Contractor during the High Level Solution Design Phase and updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The UPMP must specify, as a minimum, the following: a. current project status; b. project overview; c. scope & deliverables; d. solution approach, including: I. architecture & phase approach; II. organisation Change management; and III. delivery approach; e. budget & schedule; f. dependencies; g. roles & responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for	The Customer (or its nominee)

		Deliverables identified in section 7.4; and k. key risks & issues.	
13.	RACI	Contribute to the RACI Deliverable being developed by the System Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Other Contractors and the Customer. Note an initial draft of the Detailed Design document deliverables RACI is listed in Appendix F.	The Customer (or its nominee)
14.	Agreed Final Contract	The Final Contract will incorporate certain detailed design activities. The Final Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor
15.	Detailed Implementation & Maintenance Phase PIPP	The Detailed Design, Implementation and Support PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	The Customer and Contractor
16.	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)
17.	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the System Integrator. The Release 1 System Test Plan describes how the testing will be delivered for the Release 1 System Test phase and must include: a. Test plan identifier; b. References; c. Introduction; d. Test Objectives; e. Test items; f. Software risk issues; g. Features to be tested and traceability;	The Customer (or its nominee)

		h. Features not to be tested and reasons; i. Approach including the use of stubs, simulators etc; j. Item pass/fail criteria (if different from Strategy); k. Suspension criteria and resumption requirements (if different from Strategy); l. Test deliverables; m. Environmental needs; n. Staffing and training needs (if different from Strategy); o. Responsibilities; p. Schedule of tasks and assigned staff; q. Planning risks and contingencies; r. Approvals; and s. Glossary.	
18.	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the System Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)
19.	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the System Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. Booking and reserving test systems; b. Tracking environment changes; c. Managing environment contention; d. Code/Defect management (Code promotion processes); e. Environment scheduling;	The Customer (or its nominee)

		f. Configuration tracking; g. Data Management (Extracts, transforms loads); and h. Managing interdependent projects.	
Transformation and Change Deliverables			
20.	Operating Model	Contributing to the development of the Operating Model being developed by the System Integrator. The Operating Model must document and /or identify: a. best practice levels 2-4 process flows; and b. capability gaps in systems and processes. The process model will conform to best practice principles. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation. Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Best practice process flows Deliverable description:** The best practice process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following: a. best practice levels 2-4 process flows; b. validation of processes against real life scenarios . **Capability gaps in systems and processes deliverable description:** Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended best practice process flows to confirm the changes to processes and capabilities. The key focus of this deliverable will be on the level	The Customer (or its nominee)

		4 gaps and/or variations in processes as dictated by the out of the box technology processes.	
21.	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)
22.	Change Impact Analysis (Release 1)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions (note updated assumptions section): a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes	The Customer (or its nominee)

		within the ROC. A Change Impact Analysis will accompany the Release 1.	
23.	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the System Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)

5.4.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6. Initial Implementation (Release 1) Phase

6.1 Overview and purpose of Initial Implementation (Release 1) Phase

6.1.1 The purpose of the Initial-Implementation (Release 1) Phase is to:

a) enable the Contractor to commence the development and implementation of the Requirements into the REM product road-map so that the next release of the Licensed Software can fulfil the specifications and functionality specified in the Technical Documents; and

b) ensure the Licensed Software is available for testing in the System Integration Test Environment (SIT).

6.1.2 The scope of the Services and Deliverables under the Initial Implementation (Release 1) Phase explicitly excludes integration of the Licensed Software into the SIT environment, testing on-site and adaptation of the interfaces with Other Contractors' software.

6.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Initial Implementation (Release 1) Phase are supplied and completed;

b) all Deliverables that it is obliged to supply under Initial -Implementation (Release 1) Phase are approved by the Customer (or its nominee); and

c) the Licensed Software delivered under section 6.4 includes each of the Updated Requirements,

on or before the relevant date(s) specified in the Project Schedule.

6.2 Entry Criteria

6.2.1 The Entry Criteria for the Initial Implementation (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Detailed Design (Release1) Phase completed to necessary level to start the Initial Implementation (Release 1) Phase	All Services that the Contractor is required to supply during the Detailed Design (Release 1) Phase have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1) Phase.
2.	Previous Phase Deliverables Completed	The Customer has Accepted all Deliverables supplied in the Detailed Design (Release 1) Phase or, in the Customer's sole and absolute discretion, are at the necessary level to start the Initial Implementation (Release 1) Phase. Where one or more Deliverables in the Detailed Design (Release 1) Phase have not been Accepted by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.

6.3 Services

6.3.1 Subject to section 7.7, the Contractor must supply the following Services as part of the Initial Implementation (Release 1) Phase:

#	Description
1.	Adaptation of the Licensed Software to reflect the Customer's Requirements for REM 2016.1 as specified in the Technical Documents.
1A	Customisation of REM Mobile 2016.R1 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis for REM Mobile 2016.R1 v1.00, based on the DTBRS.
2.	Document and define system interfaces as detailed in the Technical Documents.
3.	Inclusion of four (4) additional Customer gap features that have been specified during the Detailed Design (Release 1) Phase into the Licensed Software. Refer to the document titled "DTBRS GAP Analysis Version 3.0" for a list of the relevant items identified with a planned delivery date of 30/04/2016.
4.	Preparation of off shore testing of the Licensed Software that shall include setup of in-factory test environment
5.	**On site Test Preparatory Activities (REM 2016.1R1)** a) set up test of non-Production Licensed Software; b) definition of interfaces and Software components for testing; c) analysis and generation of test data in relation to REM2016.R1 Licensed Software; and d) Set up test of interfaces according to Release 1 Integration Specification.

5A	**Internal Contractor System Integration & Test for REM Mobile Software** a) REM Mobile Software installation and REM Mobile Software Update; b) configuration of Interfaces and Licensed Software components; c) test of interface; d) boundary testing (e.g. timeouts, connection issues, reconnection, data mismatch); and e) capturing of log-files and coordination with the Contractor's factory. All listed services are performed on the Contractor's internal REM Development environment before SIT (which will be within the scope of the Final Contract). For clarity, as set out in section 6.1.2 above, the scope of the Services under the Initial Implementation (Release 1) Phase excludes integration of the Licensed Software into the SIT environment, testing on-site and adaptation of the interfaces with Other Contractors' software.
6.	**Data Profiling Support:** Support of data profiling activities performed by the Systems Integrator comprising 4 workshops and preparation for the same.
7.	**Data Management Support (On-shore & Off-Shore):** Technical support of the Contractor's data management team
7A	**Configuration Data Import for REM Mobile 2016.R1. (off-site):** Initial import of configuration data into the REM Mobile 2016.R1 data base.
8.	**Master Data Import / Export (offsite) support** Support of the process of master data gathering, preparation and importing into the different REM system environments in the different project stages, including the following activities: a) master data input as defined in an XLS-template provided by the Contractor; b) clarification of data structure specified in the XLS template; c) dry-run of the provided Master data XLS template on the relevant development system; d) one time import of the XLS-template to database on the Customer's Environment (further imports based on database dumps performed by SIT & System test) (Note: SAT and UAT will be performed in the implementation phase of the Final Contract; Additional required support can be ordered by the Customer via Change Request
9.	**Project Management as detailed in Appendix B**
10.	**Solution Architecture Support as detailed in Appendix B**
11.	**System Engineering:** Support of the System Integrator's System Administrator and maintenance of pre-Implementation environments until handover to the Customer of the master data import / export (on-site).

12.	**Solution Consultancy Support as detailed in Appendix B**
13.	**Quality and Requirements Management as detailed in Appendix B**
14.	**System Administration Training:** Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of the REM IMS. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. The aim of the course is to provide attendees with training enable the attendees to: a) identify components of the REM IMS and assign them to system structures; b) explain the functionality and purpose of the individual components of REM IMS, including system interfaces; c) interpret operational and technical messages of the REM IMS and analyse causes; d) carry out maintenance working steps for administration of the REM IMS components according to the system administration manual; e) carry out software update procedures for the REM IMS; f) name, readout and interpret relevant log files of the REM IMS; g) assess the technical and operational effects of these actions; and **h)** fulfil 2nd level support requirements.
15.	**Application Administration Training:** The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of the incident management system for REM 2016.1.R1. The aim of the course is to provide attendees with training enable the attendees to: a) explain the functionality of REM 2016.1.R1; b) explain the functionality of the REM IMS Data Management Client; c) explain the functional data structure of REM 2016.1.R1; d) maintain REM 2016.1.R1 configuration data; e) configure the responsibility model; f) configure the track network; g) configure workflows; and **h)** carry out user, role and group administration.
16	**System Administration:** The System Administrator is responsible for all installation and administration works related to the Licensed Software in the Configuration, REM Development, TIBCO-Sydney Trains (Customer component only), SIT, UAT and training environments. This Service ends on 31 August 2016, unless extended by mutual agreement. The scope of the System Administrator during the Initial Implementation (Release 1) Phase and Final Contract are as set out below. **Under Initial Implementation (Release 1) Phase (under this Customer Contract)** The scope of the System Administrator under the Initial Implementation (Release 1) Phase includes: a) performing application related database setups, including: i. set-up of database instances; ii. set-up of database users;

iii. set-up of schemes; and
iv. set-up of Oracle database recovery and backup procedures (optional, depending on system operation model);

b) importing and exporting of database dumps:
   i. as preparation of the test systems;
   ii. as preparation for the production environment; and
   iii. for debugging and Defect reproducing reasons;
c) performing database schema updates, as required;
d) installation and configuration of monitoring tools according to Customer standards; and
e) setup, management and tracking of users and associated access levels

Under the Final Contract (Implementation and Support)

The scope of the System Administrator under the Final Contract will include:

a) installing and deploying REM application versions of the Licensed Software on the Customer environments, including:
   i. REM Incident Management software and additional necessary software packages; and
   ii. Java and Tomcat;
b) configuration of the REM application on system level, including various configuration and start up files;
c) performing application related database setups, including:
   i. set-up of database instances;
   ii. set-up of database users;
   iii. set-up of schemes; and
   iv. set-up of Oracle database recovery and backup procedures (optional, depending on system operation model);
d) importing and exporting of database dumps:
   i. as preparation of the test systems;
   ii. as preparation for the production environment; and
   iii. for debugging and Defect reproducing reasons;
e) performing database schema updates, as required;
f) installation and configuration of monitoring tools according to Customer standards;
g) integration with sub-systems and TIBCO, including:
   i. supporting the System Integrator and engaged Customer application support teams;
   ii. configuration of REM instance connectivity;
   iii. assistance in configuration of REM backend; and
   iv. supporting and system configuration of direct integrations;
h) performing basic sanity testing of the integration and configuration;
i) validating REM instance configuration via point to point connectivity testing;
j) verifying all required connectivity from/to REM instance on each non-production environment;
k) recording, verifying, investigating and assisting to resolve all SEV1 and SEV2 defects (the definition of which will be agreed by the Parties prior to entry into the Final Contract) recorded during system shakeout in each environment;
l) recording, verifying, investigating and assisting to resolve all REM application related Defects recorded during each test phase;
m) System level issue tracing, including:
   i. identification of problem sources;
   ii. log file locating;
   iii. log file extraction and handling;
   iv. creation of defect description;
   v. reproduction of the Defect (includes knowledge of EMC and DMC and

	basic understanding of system functionality); and vi. filing an error report in the Contractor's Defect reporting tool ITMS. For clarity, the work outlined above as being within the scope of the Final Contract will be performed under the Final Contract and not under this Customer Contract.

6.3.2 The Contractor must supply the Services which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6.4 Deliverables

6.4.2 The Contractor is responsible for the following Deliverables:

#	Deliverable	Description	Approver
1	REM System (Software Delivery Stage 2016.R1)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery 2016.R1. The software will not be implemented in to the SIT environment; it will only be made available "to be" implemented in to the SIT environment subject to the signing of the Final Contract. The Deliverable for the purpose of this phase is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.	The Customer (or its nominee)
2.	REM 2016.1R1	Release of the Licensed Software incorporating the Requirements for REM 2016.1R1 and REM Mobile 2016.R1.	The Customer (or its nominee)
3	Test Documentation *	Provision of: a) Test Summary Report for System Tests provided by the Contractor; b) Test Objective Matrix for SAT; and c) Test cases (including Test Systems) SAT	The Customer (or its nominee)
4	Interface Documentation*	Documentation for REM 2016.1.R1 to: a) SIRI interface; b) Notification interface; and c) Shadow DB interface, all as further documented in the Release 1 Integration Specification.	The Customer (or its nominee)
5	Data Model documentation*	Documentation for the REM data model	The Customer (or its nominee)
6	System Administration Training Material*	Training material for System Administration and Application Administration Training (on USB Medium), comprising: a) Trainer PowerPoint slide pack; and	The Customer (or its nominee)

		b) Server manual.	
7	User Manuals*	System Administration Manual (Operator View) comprising: a) User Manual for IMC; b) User Manual for DMC; and c) User Manual for Webportal.	The Customer (or its nominee)
8	Test Procedure Book (REM Mobile 2016.R1) *	The Contractor will create the Test Procedure Book for REM Mobile 2016.R1 SAT.	The Customer (or its nominee)
9	Test Objective Matrix for SAT (REM Mobile 2016.R1) *	The Test Objective Matrix (TOM) demonstrates test coverage to meet Customer requirements, specifications and designs. The Contractor will create the Test Objective Matrix for REM Mobile 2016.R1 SAT in accordance with the Contractors' existing in house processes.	The Customer (or its nominee)
10	Functional Specification (REM Mobile 2016.R1) *	The Contractor will create the Functional Specification (REM Mobile 2016.R1) document. The Functional Specification (REM Mobile 2016.R1) defines required capabilities, appearance and interaction with users for the mobile notifications solution for the Incident Management System in ROC Release 1. The functional specification will be used to validate that REM Mobile 2016.R1 meets the updated DTBRS developed by the Customer. Functional specifications relate to the following: a. function involving user interaction and its user interface; and b. function which is unattended processing such as batch processing,	The Customer (or its nominee)
11	Gap Analysis (REM Mobile 2016.R1) *	The Contractor will create the GAP Analysis (REM Mobile 2016.R1). The GAP Analysis (REM Mobile 2016.R1) shall be based on the DTBRS to reflect the findings by the Contractor and Other Contractors (as applicable). The GAP Analysis (REM Mobile 2016.R1) Deliverable specifies the gaps between the detailed requirements for the mobile notifications solution for the Release 1 REM IMS and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application	The Customer (or its nominee)

		enhancements; c. show traceability to the resolving business workarounds; and d. if required, identify any gaps that will not be resolved, and present a forecast of the impact to the Customer business.	
12	User Manual REM Mobile 2016.R1 *	The user manual includes a general description of the functions and capabilities of the mobile application and contains all the basic information for the users to familiarise themselves with the mobile application (REM Mobile).	The Customer (or its nominee)

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract that the Parties anticipate executing by 29 February 2016.

6.4.3 The Contractor is responsible for supporting the following Deliverables that belong to the Systems Integrator:

#	Deliverable	Description	Approver
1.	Updated Implementation Strategy	Contribute to the Updated Implementation Strategy document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
2.	Updated Project Management Plan	Contribute to the Updated Project Management Plan being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
3.	Updated Architecture Specification	Contribute to the Updated Architecture Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
4.	Updated Integration Functional Specification	Contribute to the Updated Integration Functional Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
5.	Updated Release 1 Data Technical Analysis Outputs	Contribute to Updated Data Technical Analysis being developed by the System Integrator. Outputs must include: a. data requirement classifications (Master data, Migration Data, BI data); b. data dictionary (Source and target data systems);	The Customer (or its nominee)

		c. data migration requirements; and d. data quality rules definition (at data attribute levels).	
6.	Updated Data Management Plan	Contribute to the Updated Data Management Plan document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
7.	Release 1 Technology Implementation Plan	Contribute to the Technology Implementation Plan document describing the plan for the roll out of the relevant components for Release 1 and providing a detailed plan and schedule of activities to deploy the solution into the Environment. It must address training and installation of the REM IMS into the Environment, cutover and roll back. The final version must be provided 10 weeks prior anticipated deployment date for Release 1.	The Customer (or its nominee)
8-.	Release 1 Functional Specification	Contribute to the Functional Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)

6.4.4. The Contractor must supply the Deliverables which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7. Acceptance, Change Request and Assumptions

7.1 Acceptance

7.1.1 The Contractor must:

a) in collaboration with the Customer and Other Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Other Contractors (as required) to ensure that all Deliverables that are part of the Detailed Design (Release 1) and Initial Implementation (Release 1) Phase are fit for purpose and meet the agreed Acceptance Criteria.

7.1.2 Subject to section 7.1.10, the Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Implementation & Maintenance Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

7.1.3 Deliverables will be reviewed by the Customer (or the System Integrator acting as the Customer's nominee). Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with clause 5 of the Additional Conditions, the System Integrator will request the Customer's endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

7.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

a) Milestone Acceptance Forms must be signed in writing by the Contractors Project Director and Customers Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customers delegate; notification by email of the endorsement is sufficient.

d) Contractors Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) the Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in clause 5.4 of the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

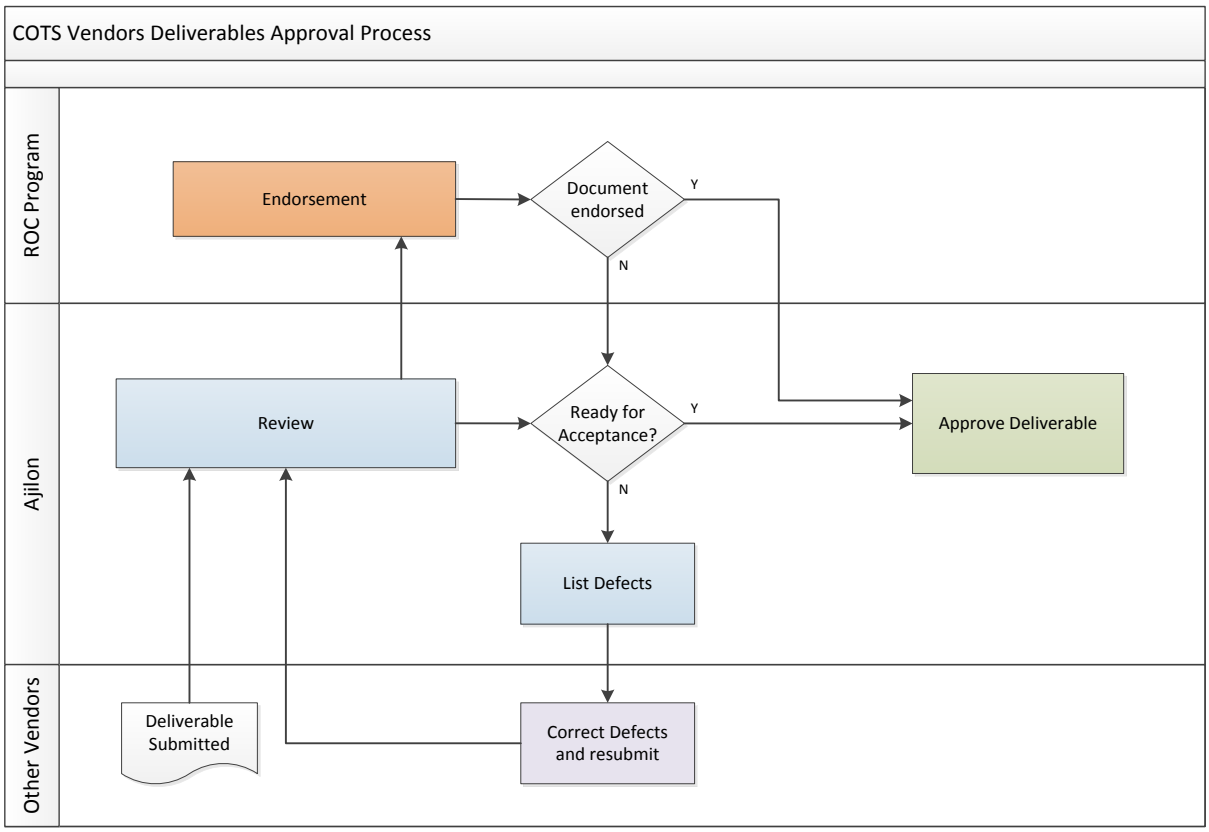
h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of defects (tracked in a spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



7.1.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7.1.6 The Contractor must ensure that the Solution, as it applies to REM IMS described in the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design (Release 1) Phase, Initial Implementation (Release 1) Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

7.1.7 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with clause 5 of the Additional Conditions.

7.1.8 The Detailed Design supplied by the Contractor under the Detailed Design (Release 1) Phase and the Deliverables supplied by the Contractor under the Initial Implementation (Release 1) Phase and endorsed/approved by the Customer/System Integrator (as applicable) will be the 'Solution' for the purposes of this PIPP.

7.1.9 For the purposes of the Customer Contract the 'Contract Specifications' for the Solution will be:

a) the Initial Requirements (as amended or updated in any documents supplied under the Detailed Design (Release 1) Phase and approved by the Customer);

b) the specifications, designs, any performance standards or other requirements for the Solution set out in any of the documents supplied by the Contractor in the Detailed Design (Release 1) Phase and approved by the Customer; and

c) any other the requirements relating to the Deliverables or the Solution as set out in this PIPP.

7.1.10 The Contractor agrees that any review, comment, approval, endorsement or election (including an election in respect of Detailed Design) or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect other Services or Deliverables under this Customer Contract, including in respect of the Detailed Design (Release 1) Phase;

b) does not limit or affect the provision of the Contractor's warranties or indemnities

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

7.2 Change Request

7.2.1 If:

a) during the Detailed Design (Release 1) Phase or the Initial Implementation (Release 1) Phase the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Initial Requirements (**Requirements Variation**); and

b) that Requirements Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

7.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 7.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits the Detailed Design,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Requirements Variation.

7.3 Not used

7.4 Summary Table of Deliverables and expected delivery dates

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Release 1) Phase and documented in the associated draft Project Schedule)

Detailed Design (Release 1) Phase

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 1	Updated High Level Solution Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 2	Release 1 Architecture Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 3	Release 1 Functional Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 4	Release 1 Non-Functional Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 5	Release 1 Integration Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 6	Project Communication Plan for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 7	Release 1 Data Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 8	Release 1 Data Technical Analysis Outputs	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 9	Updated Technology Implementation Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 10	Release 1 Technology Implementation Plan (Template)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 11	Technology Test Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 12	Updated Project Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 13	RACI	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 14	Agreed Final Contract	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 15	Detailed Implementation & Maintenance Phase PIPP	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 16	Updated Release 1 Product Gap Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 17	Release 1 System Test Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 18	Requirements Traceability Matrix for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 19	Technology Environment Management Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 20	Operating Model	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 21	Draft recommended ROC organisational structure	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 22	Change Impact Analysis (Release 1)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 23	Release 1 Training Needs Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 24	REM System Software Delivery Stage 2016.R1	*Software*	*30 April 2016*	*30 April 2016*
WBS 25	REM 2016 R1 Licensed Software	*Software*	*31 May 2016*	*31 May 2016*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 26	Test Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 27	Interface Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 28	Data model Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 29	System Administration Training Material*	*Document, PowerPoint Slides*	*31 May 2016*	*31 May 2016*
WBS 30	User Manuals*	*Document*	*31 May 2016*	*31 May 2016*
WBS 31	Updated Implementation Strategy	*Document*	*31 May 2016*	*31 May 2016*
WBS 32	Updated Architecture Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 33	Updated Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 34	Updated Integration Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS35	Updated Release 1 Data Technical Analysis Outputs	*Document*	*31 May 2016*	*31 May 2016*
WBS 36	Updated Data Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 37	Updated Project Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 38	Release 1 Technology Implementation Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 39	Test Procedure Book (REM Mobile 2016.R1) *	*Document*	*15 May 2016*	*15 May 2016*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 40	Test Objective Matrix for SAT (REM Mobile 2016.R1) *	*Document*	*15 May 2016*	*15 May 2016*
WBS 41	Functional Specification (REM Mobile 2016.R1) *	*Document*	*15 April 2016*	*22 April 2016*
WBS 42	Gap Analysis (REM Mobile 2016.R1) *	*Document*	*14 March 2016*	*21 March2016*
WBS 43	User Manual REM Mobile 2016.R1 *	*Document*	*31 May 2016*	*31 May 2016*

***Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract.**

7.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

7.6 Exclusions

Not applicable.

7.7 General Assumptions

7.7.1 **Product Capabilities - IMS-CAP-062.09**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.2 **Product Capabilities - IMS-CAP-002 / Non-functional requirements - NFR-SEC-004**-The governance over access to Sydney Trains "intranet" is under control of Sydney Trains.

7.7.3 **Product Capabilities - IMS-CAP-017.02**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.4 **Product Capabilities - IMS-CAP-039.01**-The display of a heat map for over crowding on platforms and a traffic light for visually tracking is provided as layer in the legacy GIS system.

7.7.5 **Non-functional requirements - NFR-AUD-007**-The accessibility of backend environment is controlled by Sydney Trains and/or the System Integrator.

7.7.6 **Non-functional requirements - NFR-AV-004**-Clustered hardware hosting virtual machines and the licenses for those virtual machines are provided as CSI.

7.7.7 **Non-functional requirements - NFR-IO-003**-A email server will be provided as CSI, an outgoing email address will be supported.

7.7.8 **Non-functional requirements - NFR-IO-004**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.9 **Non-functional requirements - NFR-IO-006**-The Operating Systems clock will be synchronized with standard IT synchronising mechanisms such as e.g. NTP Clock. The maintenance the support and the licenses for such SW is assumed to be provided CSI.

7.7.10 **Non-functional requirements - NFR_PER_NEW**-It is assumed that geographical diversity refers to situations where mobile users or clients lose connectivity with the system due to reception black sports or bandwidth shortage.

7.7.11 **Non-functional requirements - NFR-SEC-002**-It is assumed that the Active Directory environment is a customer supplied item.

7.7.12 **Non-functional requirements - NFR-SEC-010**-The Active Directory system will be provided and configured by Sydney Trains as CSI.

7.7.13 **Interfaces - IMS to BI**-The IMS database will be a Customer Furnished Item. The maintenance- and setup- task of such a shadow database will be part of the Sydney Trains internal IT department.

7.7.14 **Interfaces - IMS to Dashboard**-The assumption is that "Dashboard" refers to "OVDS" (Operational Video Display System).

7.7.15 **Interfaces - SMS**-It is assumed that the SMS provider is a customer furnished item.

7.7.16 **Interfaces – CTI IMS Options Paper - Comms**-It is assumed that the VCS system is a customer furnished item.

7.7.17 **Interfaces - Active Directory** -It is assumed that the Active Directory environment is a customer furnished item.

7.7.18 **Interfaces - Email** -It is assumed that the email system is a customer furnished item.

7.7.19 **Interfaces - Voice Mail**-Text to Speech Engine will be provided as Customer Furnished Item. Vocabulary and repository provided as Customer Furnished Item.

7.7.20 **Interfaces - GIS to IMS**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.21 **PM Plan - Project Timeline**-The assumptions are based on a presumed start of the project implementation in May 2015.

7.7.22 **IMS Options Paper - User Interface**-Regarding NIN: The governance of Sydney Trains "intranet" is under control of Sydney Trains.

7.7.23 **IMS Options Paper - User Interface**-NIN messages received by REM are considered valid, truthful and trustful and will be passed on towards the IMS incident operator as NIN-Notification without further

7.7.24 **IMS Options Paper - User Interface**-The availability of speakers, headphones or other acoustic devices, used to reply the configured acoustic signals in appropriate quality is outside the responsibility of Frequentis.

7.7.25 **IMS Options Paper - Comms**-It is assumed that the SMS provider is a customer Supplied item.

7.7.26 **IMS Options Paper - Comms**-Frequentis REM offers integration with VCS systems which support ECMS232 for Computer Telephony Interface. We assume that EMCS232 will be supported by the incumbent unified communications layer within the ROC. Any alternative solutions will require additional customisation of the product

7.7.27 **IMS Options Paper - Comms**-Text to Speech Engine will be provided as Customer Supplied Item.

7.7.28 **IMS Options Paper - Comms**-Vocabulary and repository provided as Customer Supplied Item.

7.7.29 **IMS Options Paper - Comms**-It is assumed that the VoiceMail provider is a customer Supplied item.

7.7.30 **Implementation Strategy Stage 1**-The site and system environment for deploying the demonstrator system has to be provided by Sydney Trains or the System Integrator.

7.7.31 **Implementation Strategy Stage 1**-It assumed that email communication shall be supported and that an email server will be provided as Customer Furnished Item.

7.7.32 **Implementation Strategy Stage 2**-The raw data containing the information for building the foundation for the system's productive configuration is available and structured.

7.7.33 **Implementation Strategy Stage 2**-SMEs familiar with the data layout, it's meaning and purpose are available and support the data import process

7.7.34 **Implementation Strategy Stage 2**-It is assumed that email communication shall be supported and that an SMS provider is available. Limitations of SMS provider capabilities need to be considered (e.g. two way communication).

7.7.35 **Implementation Strategy Stage 2**-The connection and availability of a SMS provider is regarded a Customer Furnished Item.

7.7.36 **Implementation Strategy Stage 3**-A DTTS system which provides an interface for the IMS systems available.

7.7.37 **Implementation Strategy Stage 3**-A CIMS system which provides an interface for the IMS systems available.

7.7.38 **Implementation Strategy Stage 3**-The integration will be performed outside the productive environment.

7.7.39 **Implementation Strategy Stage 3**-A test environment able to host all three systems: REM, DTTS and CIMS is available and accessible.

7.7.40 **Implementation Strategy Stage 3**-DTTS and CIMS are configured in a way to allow testing of feasible and realistic use cases.

7.7.41 **Implementation Strategy Stage 3**-In case of missing systems to be integrated (DTTS or CIMS), simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.42 **Implementation Strategy Stage 4**-All legacy systems for integration with the IMS are configured and available.

7.7.43 **Implementation Strategy Stage 4**-In case of missing systems to be integrated, simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.44 **Implementation Strategy Stage 4**-It assumed that CTI integration with the VCS shall be supported.

7.7.45 **Implementation Strategy Stage 4**-It is further assumed that the IMS will gain full access to a non productive VCS environment in order to test the integration.

7.7.46 **Implementation Strategy Stage 4**-It assumed that Voice Mail communication shall be supported and that a Voice Mail provider is available. Limitations of Voice Mail provider capabilities need to be considered (e.g. two way communication).

7.7.47 **Implementation Strategy Stage 4**-It is assumed that a speech engine for creation of Voice Mail messages is available.

7.7.48 **Implementation Strategy Stage 4**-The connection and availability of a Voice Mail provider and an appropriate speech engine is regarded a Customer Furnished Item.

7.7.49 **Licensing**-The capacity of the server installation is based on the following assumptions:

a) Up to 50 concurrent users of REM Incident Management Client;

b) Each operator is concurrently working on up to 5 incidents in parallel;

c) Up to 5 concurrent users of REM Data Management Client;

d) Up to 500 concurrent users accessing the REM Web Access Client;

e) Up to 50 concurrent users of REM Mobile Squad Leader App devices; and

f) Up to 80 concurrent users of REM Notification Sender App devices.

7.7.57 **Pricing**-License prices are based on the scoped amount. A discount has been applied given the number of licences specified. If this amount reduces, the discount will not apply.

7.7.58 **CSI-**All other CSI and responsibilities listed in the PIPP.

7.7.59 **Pricing** – Frequentis efforts have been calculated on the efforts agreed in the PIPP delivered in the High Level Solution Design Phase. If efforts are above and beyond the work originally scoped because of reasons including, but not limited to, contributions to new documents and/or other contractor's deliverables, a Contract Change Variation shall be raised.

7.7.60 **Pricing** – Transformational and Change Deliverables were not a part of the original Frequentis scope. The efforts and contribution to these activities

needs to be analysed in conjunction with the System Integrator. The additional efforts will require a Contract Change Variation or additional payment arrangement.

7.7.61 **Scop**e – The final definition of what feature is available in which release needs to be defined in the initial workshops.

7A. Implementation

7A.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the parties.

7A.2 Implementation strategy

7A.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

7A.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Deliverable No.9 in sections 5.4.

7B. Project Management

7B.1 Advice and knowledge transfer

Subject to the exclusions in section 7.6, the Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

7B.2 Contractor assistance

If requested, the Contractor must participate all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Initial Requirements, or if amended the Requirements, are accurate and complete; and

b) the Contractor's proposed solution.

7B.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

7B.4 Risk management

7B.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes Delivery Risks,

(**Issues Register**).

7B.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

7B.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 7B.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the Delivery Risks.

7B.4.4 The Contractor must report to the Customer:

a) Any issues or risks (including any Delivery Risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the Delivery Risks, immediately on becoming aware of that change in status.

7B.5 Cooperation with Other Contractors

7B.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Other Contractors in relation to the Project;

b) without assuming any liability for the contents of an Other Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Other Contractors;

c) comply with all other requests of the Other Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Other Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to an Other Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this clause by the Contractor is accurate and to the extent possible, complete.

7B.6 Communication with Other Contractors

7B.6.1 The Contractor must not, without the Customer's prior written consent:

a) give an Other Contractor a direction or instruction which will or is likely to vary the Other Contractor's scope in relation to the Project;

b) give an Other Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Other Contractor in relation to the Project;

c) give an Other Contractor a direction or instruction which will or is likely to delay the time that the Other Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Other Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Other Contractor in relation to the Services or the Deliverables.

7B.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and an Other Contractor, or between Other Contractors, in connection with the Project.

7B.7 Disputes between the Contractor and Other Contractors

7B.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with an Other Contractor by discussion and negotiation without the Customer's involvement.

7B.7.2 Where the Contractor has notified the Customer under section 7B.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

7B.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

7B.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

7B.8 Reliance on Other Contractors' work

The Customer does not warrant the accuracy or correctness of any unapproved reports, plans, drawings, documents or information provided by Other Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such unapproved reports, plans, drawings, documents or information.

7B.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

7B.10 Delivery Address

7B.10.1 The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

7B.10.2 The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

8. Customer Supplied Items (CSI) and Customer obligations

8.1 CSIs and obligations

8.1.1 Subject to section 8.2, the Contractor acknowledges that the Customer has provided the following CSI items to the Contractor prior to the Contract Date:

a) project scope (as documented in the architecture blueprint);

b) functional requirements (as provided in the RFP);

c) non-functional requirements (as provided in the RFP);

d) draft Implementation & Maintenance Phase PIPP

e) system security requirements;

f) data management strategy;

g) project concept and review;

h) architecture blueprint;

i) systems impacted (existing);

j) interface specifications (where available);

k) technical policies and standards;

l) draft Procure IT (the Customer Contract and this PIPP);

m) ROC organisation structure;

n) ROC program high level roadmap;

o) draft ROC program test management framework;

p) current processes;

q) concept of operations;

r) Transformation and Change Requirements v4.1;

s) ROC Systems Assurance and Planning Framework documents; and

t) ROC Data Architecture High-Level Strategy.

8.1.2 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

8.1.3 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 8.1.1(a) – (t), 8.1.2(a) and 8.2.1.

8.2 CSI Facilities and Equipment

8.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data;

c) all system environments as defined in the document titled “Technical Environment Management Strategy version 9.0”;

d) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required and validated data has to be provided in the format required by the Contractor; and

e) desktop equipment for the agreed number of Contractor Personnel working on Site,

8.3 CSI verification

8.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

8.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

8.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

9. Personnel

9.1.1 The Contractor must ensure that each member of the Contractor’s Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

9.1.2 Any of the Contractor’s Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

9.1.3 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

9.1.4 Nothing in Appendix B affects the scope of the obligations of either party as described in sections 4 and 5 of this PIPP.

10. Subcontractors

10.1 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the Detailed Design Phase workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

11. Approval by the Customer

11.1 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with clause 5 of the Additional Conditions and as per section 5.4 above.

11.2 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

12. Payment Plan

12.1 Contract Price

12.1.1 The Contract Price for the Contractor to complete Detailed Design (Release 1) Phase andInitial Implementation (Release 1) Phase of the ROC program is [redacted](ex GST).

12.1.2 The Contract Price has been calculated based on the milestones specified in the table below. A breakdown of the Contract Price is as follows:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation Phase and the Detailed Design (Release 1) Phase:			
The Services and Deliverables specified in sections 4 and 5 of this PIPP.	[redacted]	1	[redacted]
Sub-Total Project Preparation Phase and the Detailed Design (Release 1) Phase			
Initial Implementation (Release 1) Phase:			
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase (Release 1) Phase until the end of November.		1	
Travel Costs		1	
Customisation for ROC a) The majority of the customisation efforts can be deferred until 30 November 2015. b) Assumes that remaining customisation efforts will be ordered through the implementation		1	

contract until the deferred date.			
License component The REM IMS.	[redacted]	1	[redacted]
Sub-Total Initial Implementation (Release 1) Phase			[redacted]
Initial Implementation (Release 1) Phase (CR1)			
Customisation for ROC Interface customisation including GAP Features	[redacted]		[redacted]
On/Off-Site Personnel Effort 1 December 2015 to 29 February 2016	[redacted]		[redacted]
Travel Budget	[redacted]		[redacted]
Sub-Total Initial Implementation (Release 1) Phase (Continued)	[redacted]		[redacted]
CR2			
Licensed Software*	[redacted]		[redacted]
Customisation	[redacted]		[redacted]
Documentation Deliverables	[redacted]		[redacted]
System Administration	[redacted]		[redacted]
Sub-Total Initial			[redacted]

Implementation (Release 1) Phase (CR2)			
		Sub-Total:	[redacted]
		Any Other Charges:	
		GST:	[redacted]
		Total Amount:	[redacted]

*The REM Mobile Software Licences , are only 40% of the full licence price for the respective module due to the reduced functionality required by the Customer for Release 1 only, as described in the DTBRS. Full mobile functionality will be required and be provided for under the Final Contract.

12.1.3 The Contractor is to be paid in accordance with the following milestones

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Detailed Design Deliverables funded as follows:			
	Project Preparation Phase and Detailed Design (Release 1) Phase			
1	Mobilisation payment of 50% (of [redacted] of the Project Preparation Phase and Detailed Design Phase on or about the Effective Date	[redacted]	1	[redacted]
2	25% (of [redacted]) on 15th September 2015	[redacted]	1	[redacted]
3	25% (of [redacted]) on 15th October 2015	[redacted]	1	[redacted]
	Initial Implementation Phase			

4	Mobilisation payment of 50% (of [redacted]) of the Initial Implementation Phase on execution of the Customer Contract.	[redacted]	1	[redacted]
5	25% (of [redacted]) on 31 January 2016	[redacted]	1	[redacted]
6	25% (of [redacted]) on delivery of Software specified in section 6.4 of this PIPP	[redacted]	1	[redacted]
	Initial Implementation Phase (CR1)			
7	Initial Payment due upon Customer execution of CR1	[redacted]	1	[redacted]
8	Progress Payment due on 31/01/2016	[redacted]	1	[redacted]
9	Progress Payment of due on 29/02/2016	[redacted]	1	[redacted]
10	Final Payment due upon delivery of the REM2016.R1 *	[redacted]	1	[redacted]
	CR2			
11	Total CR 2 upon execution of CR2	[redacted]	**100%**	[redacted]
			Sub-Total:	[redacted]

			Any Other Charges:	
			GST:	[redacted]
			Total Amount:	[redacted]

***** The Deliverable for the purpose of this payment is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

12.2 Payment

12.2.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 12.1.3.

12.2.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

12.2.3 The Contractor acknowledges and agrees that, as at the Commencement Date, the Customer has paid the Milestone 1 payment - Mobilisation payment of 50% (of [redacted]) of the Project Preparation Phase and Detailed Design (Release 1) Phase.

12.2.4 In the event that the Final Contract is not executed by 29 February 2016 as a result of any delay to the execution of the Final Contract solely attributable to the Customer, the Parties will negotiate, in good faith, stand-down and re-mobilisation costs.

12.2.5 In the event that the Customer does not enter into the Final Contract or terminates the Customer Contract for convenience, the Parties will negotiate, in good faith, the value of the balance of the cost of the Licensed Software which will be payable to the Contractor.

12.2.6 For the purposes of the Customer Contract, the Contract Price specified in section 12.1.3 is the Contract Value.

12.3 Termination for convenience

12.3.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with clause 15 of the Additional Conditions.

12.4 Liquidated Damages

12.4.1 Liquidated Damages will not be applicable for the Detailed Design (Release 1) Phase or Initial Implementation (Release 1) Phase.

13. Governance

13.1 Authorised Representatives

13.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Mark Pigot; and

b) the Contractor's Authorised Representative is Martin Rampl.

13.2 Management committee

13.3.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Mark Pigot;

b) Stefano Bianchini;

c) Bob Allum;

d) Imola Novak;

e) Martin Rampl;

f) Christian Dorner; and

g) Julian Molzer.

13.3.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

13.3 Management committee function

13.3.1 The function that the management committee is to:

h) review and monitor progress under the Customer Contract; and

i) carry out any other functions stated in Item 16 of the General Order Form.

13.4 Management committee meetings

The management committee must meet no less than once a week during the Project at the times and locations specified by the Customer.

13.5 Management committee progress report

13.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 13.4, provide the Customer with a weekly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

i. minutes and actions from the last meeting;

ii. risks and issues;

iii. details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

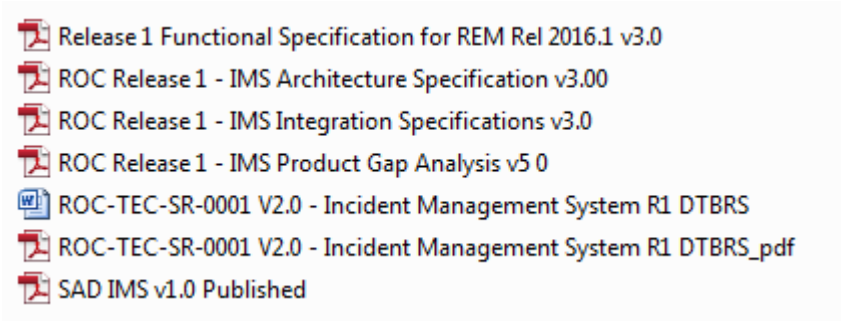
g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Initial Requirements and Updated Requirements

Part 1: Initial Requirements

Frequentis Initial Requirements.pdf

Part 2: Updated Requirements



Release 1 Functional Specification for REM

ROC Release 1 - IMS Architecture Specifica

ROC Release 1 - IMS Integration Specificat

ROC Release 1 - IMS Product Gap Analysis

ROC-TEC-SR-0001 V2.0 - Incident Management System R1 DTBRS_pdf (attached as separate pdf document)

SAD IMS v1.0 Published.pdf

Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Julian Molzer	Project Manager	a) Overall successful performance of the project within schedule and budget; b) Overall project management activities (planning, organising, controlling); c) Participation and action item processing for Project Management related topics with the Customer and System Integrator; d) Production of Weekly Status Reports, including the Project Highlight Reports; e) Attending Management Committee Meetings; f) Managing the Contractor team on-site/off-site; g) Managing Change Requests; h) Risk management – DRICA; i) Facilitating cooperation with the Other Contractors; j) Management and execution of all Project related communication between the System Integrator, CNS and the Contractor (including alignment meetings and technical clarification)
Bjoern Brunner	Solution Architect	a) Participation and action item processing in workshops with the Customer and System Integrator; b) Solution design; c) Architectural consultancy; d) Master Data mapping support; e) Support of integration and integration validation.
Armin Steinwandter & Peter Hauk	Solution Consultant	a) Solution Consultance Support (Solution Consultant) ; b) Participation and action item processing in workshops with the Customer and System Integrator; c) Product & Solution consultancy; d) Data provisioning support; e) Data management and configuration support

Bjoern Brunner	Requirements. & Test Manager	a) Co-ordination of all requirements, engineering and test activities for the Project; b) Preparation of all Acceptance Test activities.
Maria Schwarzenauer	Project Manager CNS	c) CNS project management activities (including planning, organising and controlling) d) Management and execution of all Project related communication within CNS (including technical alignment meetings and technical clarification)
Robert Devide	Requirements Manager off-site	Requirements engineering for REM2016.1.R1development off-site
Monika Blassnig	Quality Manager	Quality assurance of the Project Deliverables as well as ensuring that the Configuration Management guidelines are known and met by the Project team.
Bruce Evans	System Engineer	a) Support of System Integrator's system administration activities for Demo, Dev, SAT, SIT, UAT, Training environments until handover to the Customer; b) Master Data Import / Export (on-site).
Monika Bassnig	Configuration Manager	Identification, direction and co-ordination of the Configuration Management activities.
Alexander Bruckner	Product SW Lead	Software configuration and development in response to the requirement specifications
Bruce Evans	Test Engineer	Support Test Manager (creating, performing test cases, test documentation)
Daniel Turner	System Engineer	System Installation / Integration
Alistair McGill	Account Manager	Responsible for customer relationship management
Martin Rampl	Commercial Manager	In charge of negotiating the contract and all modifications thereto on the part of the contractor
Swdorny Veliyath	Technical Trainer	Preparation and provision of system administrator and application administrator training.

Thomas Karl	Internal Project Sponsor Frequentis	Accountable for the overall Project success towards the Contractor's executive board and participant of the ROC steering committee.
Reinhard Sollböck	Internal Project Sponsor CNS	Accountable for the success of the CNS project share towards the Contractor's executive board.

2 Customer roles and responsibilities

Name	Role	Responsibility
Mark Pigot	Technology Team Manager	Management of the Technology Team
Stefano Bianchini	Lead Architect	Oversight of Technical Design for ROC Program
Bob Allum	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Imola Novak	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
As required	Sydney Trains Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

Phases to deliverables	Baseline End Date
1. Updated High Level Solution Design	16th October 2015
2. Release 1 Architecture Specification	27th October 2015
3. Release 1 Functional Specification	27th October 2015
4. Release 1 Non-Functional Design	27th October 2015
5. Release 1 Integration Specification	27th October 2015
6. Project Communication Plan for Release 1	4th September 2015
7. Release 1 Data Management Plan	11th September 2015
8. Release 1 Data Technical Analysis Outputs	27th October 2015
9. Updated Technology Implementation Strategy	22nd September 2015
10. Release 1 Technology Implementation Plan (Template)	1st October 2015
11. Technology Test Strategy	11th September 2015
12. Updated Project Management Plan	14th September 2015
13. RACI	28th August 2015
14. Agreed Final Contract	25th September 2015
15. Detailed implementation & Maintenance Phase PIPP	24th September 2015
16.	
17. Updated Release 1 Product Gap Analysis	28th October 2015
18. Release 1 System Test Plan	15th October 2015
19. Requirement's Traceability Matrix for Release 1	15th October 2015
20. Technology Environment Management Strategy	18th September 2015
21. Operating Model	29th September 2015
22. Draft recommended ROC Organisational Structure	30th September 2015
23. Change Impact Analysis (Release 1)	9th October 2015
24. Release 1 Training Needs Analysis	23rd October 2015

25. REM System Software Delivery Stage 2016.R1	30 April 2016
26. REM 2016 R1 including REM Mobile 2016.R1.	31 May 2016
27.	
28. Test Documentation*	31 May 2016
29. Interface Documentation*	31 May 2016
30. Data Model Documentation*	31 May 2016
31. System Administration Training Material*	31 May 2016
32. User Manuals*	31 May 2016
33. Updated Implementation Strategy	31 Aug2016
34. Updated Architecture Specification	31 Aug2016
35. Updated Functional Specification	31 Aug2016
36. Updated Integration Functional Specification	31 Aug2016
37. Updated Release 1 Data Technical Analysis Outputs	31 Aug2016
38. Updated Data Management Plan	31 Aug2016
39. Updated Project Management Plan	31 Aug 2016
40. Release 1 Technology Implementation Plan	24 June 2016
41. Test Procedure Book (REM Mobile 2016.R1)*	15 May 2016
42. Test Objective Matrix for SAT (REM Mobile 2016.R1)	15 May 2016
43. Functional Specification (REM Mobile 2016.R1)*	22 April 2016
44. GAP Analysis (REM Mobile 2016.R1)*	21 March 2016
45. User manual (REM Mobile 2016.R1)*	31 May 2016

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract.

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

The overall risk management process to be applied can be summarised in the figure below.

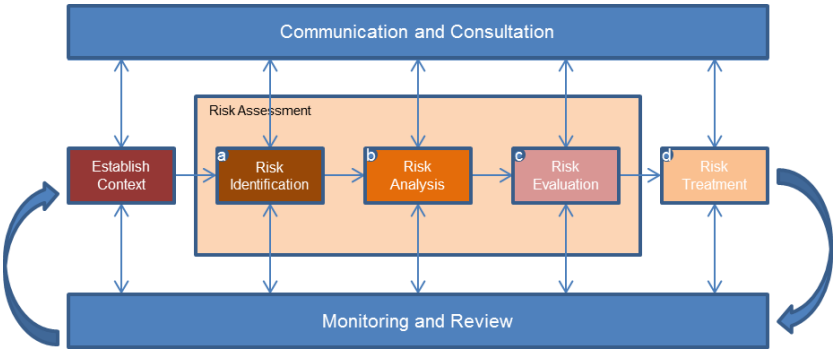


Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

Appendix E - Acceptance Form.doc

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The “doer” creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one “A” can be assigned to an action. Also known as the "Owner” of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. “In the Loop”
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. “Keep in the Picture”

Phase	Document Name	Contractor	System Integrator	Customer
Detailed Design (System Integrator and Contractor) Release 1				
	Updated High Level Solution Design	R	A,R	C
	Release 1 Architecture Specification	R	A	C
	Release 1 Functional Specification	R	AR	C
	Release 1 Non-Functional Design	R	AR	C
	Release 1 Integration Specification	R	A,R	C
	Project Communication Plan for Release 1	C	A,R	C
	Operating Model	R	A	C
	Change Impact Analysis (Release 1)	R	A,R	C

Phase	Document Name	Contractor	System Integrator	Customer
	Release 1 Training Needs Analysis	R	A,R	C
	Draft recommended ROC Organisational Structure	R	A,R	R
	Release 1 Product Gap Analysis	R	A	I
	Release 1 Data Management Plan	R	A	C
	Release 1 Data Technical Analysis Outputs	R	A	R
	Updated Implementation Strategy	R	A	C
	Release 1 Technology Implementation Plan (Template)	R	A	C
	Technology Test Strategy	R	A	C
	Updated Project Management Plan	R	A,R	C
	RACI	C	A,R	C
	Agreed Final Contract	I	A	R
	Detailed Implementation & Maintenance Phase PIPP	I	A	R
	Release 1 System Test Plan	A	R	C
	Requirements Traceability Matrix updated for Release 1	R	A,R	C
	Technology Environment Management Strategy	R	A,R	C
Initial Implementation (Release 1) Phase (Contractor & Other Contractor)				
	REM System Software Delivery Stage 2016.R1			
	REM 2016 R1 Licensed Software including REM Mobile 2016.R1.	A,R	C	C
	Test Documentation *	A,R	C	C
	Interface documentation*	A,R	C	C
	Data model documentation*	A,R	C	C
	System Administration Training material*	A,R	C	C

Phase	Document Name	Contractor	System Integrator	Customer
	User manuals*	A,R	C	C
	Updated Implementation Strategy	C	A,R	C
	Updated Architecture Specification	R	A,R	C
	Updated Functional Specification	R	A,R	C
	Updated Integration Specification	R	A,R	C
	Updated Release 1 Data Technical Analysis Outputs	C	A,R	C
	Updated Data Management Plan	R	A,R	C
	Updated Project Management Plan	C	A,R	C
	Release 1 Technology Implementation Plan	R	A,R	C
	Test Procedure Book (REM Mobile 2016.R1)	A,R	C	C
	Test Objective Matrix for SAT (REM Mobile 2016.R1)	A,R	C	C
	Functional Specification (REM Mobile 2016.R1)*	A,R	C	C
	GAP Analysis (REM Mobile 2016.R1)*	A,R	C	C
	User manual (REM Mobile 2016.R1)*	A,R	C	C

* Denotes Deliverables expected to be delivered by the Contractor to the Customer under the Final Contract.

Appendix G – Acceptance Criteria

Approval Criteria for Project Preparation Phase

The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

Approval Criteria for Detailed Design (Release 1) Phase

Standard List of Approval Criteria

The Approval Criteria for the following Deliverables of Detailed Design (Release 1) Phase are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase;

b) where the Deliverable is a document, that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (section 5.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design (Release 1) Phase, following the completion of the initial Customer/ Contractor workshops.

Approval Criteria for the Initial Implementation (Release 1) Phase

The Approval Criteria for the following Deliverables of Initial Implementation (Release 1) Phase are as follows:

a) where the Deliverable is a document, that all sections of the document are complete;

b) the Deliverable meets the criteria listed in the Deliverables section (section 6.4 of the PIPP), where stated;

c) if applicable to a document, the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

d) there are no outstanding major defects from the review of the deliverable; and

e) where the Deliverable is REM 2016.R1, receipt by the Customer of REM 2016.R1 on physical media shall occur at delivery of the executable software on physical media to the Customer. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

MODULE ORDER FORM
MODULE 3 – LICENSED SOFTWARE

Box 1 Approved Purpose

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.1)	
Specify what purpose is the Licensed Software used for. If no other purpose is specified in this Box the Approved Purpose is the internal processing of the Customer's own data.	The Approved Purpose extends to use of the Licensed Software for the internal processing of the Customer's own data, as well as the data of Transport for NSW, NSW Trains and RailCorp.

Box 2 Class of Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.2)	
Specify the specific rights that are granted by the Contractor to the Customer to use the Licensed Software. The Class of Licence defines the Price, e.g. If the Licensed Software is licensed for X "Named Users", the Class of Licence must define what a "Named User" is. Examples of the types of issues that are included in the Class of Licence include: (a) the Licence Period; (b) number and type of user; (c) number, type or capacity of Hardware; or (d) any other licence restriction/right. Also specify whether the Customer is granted the right to transfer the Licensed Software to an outsourcer in accordance with clause 2.17. [Note: If this Box is not completed then the Contractor grants the Customer the default rights to use the Licensed Software and User Documentation as described in clauses 2.2 and 2.9 of Module 3.]	**REM Server Licences** Each Instance/Server • ICM Platform Licence - 2 licenses (main and backup site) • Application Server Licence – 4 licenses (two redundant servers per site) • Web Server Licence - 4 licenses (two redundant servers per site) • REM Mobile Server Licence – 4 Licences (two redundant servers per site) **REM Gateway Licences** Each Server/Client • Incident Information Exchange-Gateway - Gateway - 4 licenses (two redundant servers per site) • Email-Gateway - 4 licenses (two redundant servers per site) • SMS-Gateway - 4 licenses (two redundant servers per site) **REM Extension Licences** Each Instance • Notifications Module – 2 instances • Document Management Module – 2 instances **REM Client and User Licences** Each Working Position/Client/User

	• Data Management Client – 5 working positions (node locked) • Incident Management Client – 50 working positions (node locked) • Named User – 2200 named users (incident management client/data management client/we client) • REM Mobile Notification Sender App – Up to 500 devices (licenced per device) **Definition Named User:** Named user is an active entry in the list of users maintained in the REM DMC Client.

Box 3 Designated Equipment

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.3)	
Specify the hardware platform/operating system combination upon which the Licensed Software is installed. [Note: Specify the type and version number of the operating system and capacity/model of the Hardware, especially if the Class of Licence is based on type or size of capacity of the Hardware.]	Use of the Licensed Software is not limited to any Designated Equipment for purposes of clauses 2 or 3 of Module 3. However, the parties will agree hardware and operating system requirements for the Licensed Software which will be the Designated Equipment for purposes of clause 8 of Module 3. For the purposes of the Initial Implementation (Release 1) Phase only, the supported operating systems for REM Mobile Server and REM Mobile Notification Sender App (**REM Mobile**) are iOS 8.4 and iOS 9 (iPhone 4s or later). The Parties will agree the operating system requirements for REM Mobile beyond the Initial Implementation (Release 1) Phase and document such requirements in the Final Contract.

Box 4 Third Party Components

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.14)	
Third Party Components Specify if the details of any software components, plug-ins and other programs are owned by third parties. This should include name and version number of each Third Party Component.	The Licenses in Box 2* are owned by CNS Solutions & Support GmbH. Both CNS Solutions & Support GmbH and the Contractor are wholly owned subsidiaries of Frequentis AG. Accordingly, the Third Party Components are supplied by the Contractor as part of the

Specify if the Third Party Components are supplied by the Contractor: (a) as part of the Licensed Software; or (b) as a Reseller (in which case Box 11 must be completed) [Note: See clause 2.7 for details.] [Note: Open source software is not included within the definition of Third Party Component.]	Licensed Software.

Box 5 Extension of Period to Notice to Renew Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Licence Period (clause 2.6(a))	
If the Licence is not perpetual, then specify the number of days written notice prior to the end of each current Licence Period that the Contractor must give of the Price, payment arrangements and/or terms for any extended Licence Period or new Licence Period that is to commence immediately after the end of the current Licence Period. If no period is specified in this Box, the period is 30 days.	Not applicable. The Licence ~~(REM 2016.1)~~ is a perpetual ~~license~~licence.

Box 6 Installation

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Installation (clause 3.1)	
Specify if the Contractor is responsible to install the Licensed Software.	Not Applicable. Support of integration and installation activities are not a part of the Services and Deliverables under this Customer Contract. These services and deliverables will occur in the Implementation & Maintenance Phase and will be governed by the Final Contract.
If the Contractor is responsible for installation of the Licensed Software: (a) specify the details of the Installation and the date of	Not Applicable.

installation; and	
(b) specify the Price for the installation, and when the Price is due.	
Installation (clause 3.3)	
Specify the date by which the access codes must be made available, if applicable. If a date is not specified, the access codes must be provided promptly following the date the Parties enter into the Customer Contract.	The REM system and codes must be delivered by the Contractor to the Customer at the end of the REM product release cycle, being 30 April 2016.

Box 7 First Release

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
First Release (clause 3.9)	
Specify if the Licensed Software or any New Release will be a First Release. If so, specify the any additional terms and conditions that apply to the First Release. If this Box is not completed, the Licensed Software and each New Release is deemed not to be a First Release.	Not Applicable.

Box 8 Right to Receive Updates and/or New Releases

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Updates and New Release (clause 4.1)	
Specify if the Contractor provides the Customer the rights to receive: (a) Updates; (b) and/or New Releases, as part of the Licence (as opposed to part of a separate Software Support Service under Module 5).	Not Applicable. Updates and New Releases will be provided as Services and Deliverables under the Implementation & Maintenance Phase and will be specified in the Final Contract.
Updates and New Release (clause 4.4(c))	

Specify the increased Licence Price when the Customer accepts the Update or New Release. If an increased Price is not specified, the Licence Price must not be increased for any Update or New Release provided during the Licence Period.	Not Applicable. Updates and New Releases will be provided as Services and Deliverables under the Implementation & Maintenance Phase and will be specified in the Final Contract.

Box 9 Warranties for Open Source Code

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Open Source Software (clause 5.2(b))	
If the software is Open Source Software: (a) specify the Open Source Licence that governs the use of the open source software; (b) specify whether the open source software is provided with the warranties that the Contractor provides in respect of Licensed Software, or whether the Contractor provides the open source software without any warranty (to the extent permitted by law)	The Parties acknowledge and agree that any Open Source Software incorporated in the Licensed Software will be governed by the terms and conditions of the Final Contract.

Box 10 Ancillary Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Training (clause 6.1)	
Specify if training services are to be provided.	The Contractor must provide system administrator training and application administrator trainings during the Contract Period in order to enable the Customer's Personnel to configure the Licensed Software. Further detail in relation to the training services to be provided by the Contractor is set out in section 6.3 of the PIPP.
If so, specify details, dates and the Prices of the training services, and when payment is due.	The scope of the system administrator training and application administrator trainings is to be clarified during the Detailed Design Phase. The Contractor acknowledges and agrees that the Contract Price includes a cost for providing the

	system administrator training and application administrator trainings. Further detail in relation to the training services to be provided by the Contractor is set out in section 6.3 of the PIPP.
Other Services (clause 6.2)	
Specify the details, times, Prices for ad hoc issue resolution or support service for the Licensed Software, and when payment is due. [Note: If Software Support Services are being provided for the Licensed Software under Module 5, do not complete this Box.]	Not Applicable.

Box 11 Business Models of the Reseller

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Reseller Provision of Licensed Software (clause 7.1)	
Are any of the Deliverables being provided by the Contractor in the capacity as a Reseller? If yes: (a) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller as Facilitator. [Note: Reseller as Facilitator means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(a).] **OR**	Not Applicable.
(b) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller with Pass Through Warranties. [Note: Reseller with Pass Through Warranties means the Contractor is	

acting in a particular role and has a particular set of responsibilities described in clause 7.1(b).]	

Box 12 Value Add Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Acquisition through a Reseller (clause 7.3)	
Specify if the details of any value add services the Contractor is to provide, the Prices and when payment is due.	Not Applicable.

Box 13 Customer Maintains Records

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Records (clause 10.1(a))	
Specify if and, if so, how the Customer must maintain records as to the locations of all copies of the Licensed Software and the usage of the Licensed Software.	Not Applicable. Records requirements will not apply until the Implementation & Maintenance Phase and will be specified in the Final Contract.
Records (clause 10.1(b))	
Specify the frequency that the Customer provides copies of the records under clause 10.1(a). If this Box is not completed the Customer must provide copies of the records ever six months.	Not Applicable.

1. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number	3
Date of Change Request	7 July 2016
Originator of need for Change Request	Customer
Proposed Implementation Date of Change	7 July 2016
Date of expiry of validity of Change Request	Not Applicable
Contractor's estimated time and cost of evaluation	Not Applicable
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**	Not Applicable

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**
4 July 2016	*3*	*As set out in this Change Request Form*	*Bob Allum*
16 June 2016	*2*	*As set out in the Change Request Form for that variation.*	*Bob Allum*
10 February 2016	*1*	*As set out in the Change Request Form for that variation.*	*Bob Allum*

DETAILS OF CHANGE REQUEST

Summary

The current Project Implementation and Payment Plan (PIPP) provides for IMS Detailed Design (Release 1) Phase, as well an Initial Implementation (Release 1) Phase encompassing the software licence and preliminary build activities for REM 2016.R1 and REM Mobile 2016.R1.

The Customer has requested, and the Contractor has agreed, to:

a) commence certain customisation activities to their base REM 2016.R1 software in order to develop REM 2016.R2 in order to meet the Contractors next release cycle;
b) commence certain customisation activities to their base REM Mobile 2016.R1software in order to develop REM Mobile 2016.R2 in order to meet the Contractors next release cycle; and

c) commence certain customisation activities of the base REM Mobile 2016.R1 software, to bridge a functional gap in Sydney Trains mobile deployment and enable REM Mobile to be tested and supported in the non-production environment.

The need to develop REM2016.R2 and REM Mobile 2016.R2 were derived from the Gap analysis performed by the Parties during Detailed Design.

The requirement for support of non-production deployment and management of REM Mobile was identified during planning for REM Mobile deployment in Sydney Trains production and Non-production environments. Sydney Trains IT does not have a Mobile Device Management Platform (MDM) and therefore is unable to deliver this functionality internally.

Support of the non-production deployment and management of REM Mobile is not covered in the current scope of the REM Mobile or the current scope of the System Administrator as set out in Change Request 2.

The customisation activities are to the base software that may be used by other Frequentis customers.

The Parties acknowledge and agree that the REM2016.R2 and REM Mobile 2016.R2 are deliverables for Release 3 but certain activities have been bought forward to reduce customisation work anticipated for Release 3.

SCOPE

The scope of this CR3 comprises:

(a) the enhancement of REM 2016.R1 and REM Mobile 2016.R1 to reflect the additional requirements identified in the GAP analysis performed by the Parties during Detailed Design; and
(b) Customisation of the base software to enable REM Mobile 2016.R1to be tested and supported in the non-production environment.

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

The effects of CR3 are:

(a) Additional suite of Services and Deliverables for REM2016.R1 and REM Mobile 2016.R2 as set out in section 6.3.1 and 6.4.2 of the PIPP;
(b) Incorporation of additional deliverables to the WBS in section 7.4 of the PIPP;
(c) [Updates to the CSI and Customer obligations in section 8 of the PIPP;
(d) Revision of the Payment Plan in section 12 of the PIPP to incorporate the new Services and Deliverables;
(e) Updates to Appendix C of the PIPP (Project Schedule) to incorporate the additional Deliverables; and
(f) Updates to Appendix F of the PIPP (RACI) to incorporate the additional Deliverables.

EFFECT OF CHANGE ON PROJECT TIMETABLE

The activities for the REM Mobile 2016.R1 deployment are a pre-condition to entering SAT for REM Mobile 2016.R1 (which will be tested in the SIT environment). The amendment for REM 2016.R2 and REM Mobile 2016.R2 does not affect Release 1 as the enhanced functionality will be deployed during Release 3. Release 3 timetable remains unchanged.

New PIPP (annexed)

The current PIPP is replaced in its entirety (see Attachment 1 to this Change Request).

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

The effect of CR3 is to increase the value of the Detailed Design Agreement by [redacted] resulting in the revised value of [redacted] (ex GST). The Parties have agreed to the following Milestone payments:

- Mobilisation Payment – On execution of CR3 (30%)
- Milestone payment 1 – 31st July (15%)
- Milestone payment 2 – 30th September (20%)
- Final payment due upon delivery of the REM 2016.R2 and REM mobile 2016.R2 (20%)
- Final Milestone payment – 15th December (15%)

Please refer to Section 12 of the PIPP for a full breakdown of the relevant prices.

CHANGES TO CSI

As set out in Section 8 of the PIPP

CHANGES TO CUSTOMER PERSONNEL

No change.

CHANGES TO CUSTOMER ASSISTANCE

No change.

PLAN FOR IMPLEMENTING THE CHANGE

Not applicable.

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

Not Applicable.

Responsibilities of the Contractor

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Customer

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

None.

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

None.

EFFECT ON USERS OF THE SYSTEM/SOLUTION

None.

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Additional documentation will be supplied as detailed in the updated PIPP set out in Attachment 1 to this Change Request.

EFFECT ON TRAINING

None

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

None.

ASSUMPTIONS

None

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

The following documents form part of this Change Request:

(a) the revised PIPP set out in Attachment 1 to this Change Request.

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

AUTHORISATION

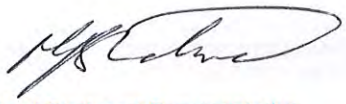
Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability



Signature of Customer Representative

MIKE SWANNELL

Print name

12/08/2016

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

MARTIN RANDL

Print name

8th August 2016

Date

Attachment 1 – PIPP

ANNEXURE B TO THE CUSTOMER CONTRACT

Schedule 12: PIPP

1. Introduction

1.1. The Customer is establishing a new Rail Operations Centre (ROC).

1.2 The Customer wishes to implement new technologies at the ROC which will provide enhanced capability to improve key 'day of operations' processes (the ROC Technology Solution).

1.3 The ROC Technology Solution consists of the development of four new technology systems (or system capabilities). These systems include:

a) Day of Operations Timetable System (DTTS);

b) Incident Management System (IMS);

c) Customer Information Management System (CIMS); and

d) Operational Visual Display System (which will be tendered at a later date).

1.3A The Contractor has been selected as the contractor responsible for the Services and Deliverables specified in this PIPP in respect of section 1.3(b).

1.4 By implementing the ROC Technology Solution the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail – Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay** - Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15 % by 2018.
Increased operational performance and opportunity for timetable enhancements – Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay** – Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the service back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The program shall reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer	**Reduced Customer Perceived Delay** - Improvements to the timeliness, relevance and consistency of customer

information during delays – Improving the customers' ability to make decisions about their transport options.	information, particularly during disruption, will reduce the customer's perceived time of their journeys by 11% by 2018.
Better realising the benefits of future investments in rail capacity – Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function** - The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc.). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC Infrastructure design requirements.
A new world class operating centre and culture – Transforming the way 'day of operations' activities are managed within Sydney Trains, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment** - The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service – Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX** - The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability – Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX** - enabled by new systems, process improvements and colocation.

(together, the ROC Technology Solution Objectives).

1.5 To allow the Customer to better evaluate the Contractor's Solution for the ROC Technology Solution, the Customer wishes to engage the Contractor to undertake the Services and Deliverables specified in sections 4, 5 and 6 of this PIPP including, among other things, the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase (the **"Project"**).

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of the Project.

1.7 The sequence of the ROC Technology Solution has been staged as follows:

a) the RFP which solicited the solution being proposed by the Contractor;

b) the High Level Solution Design Phase which assessed the veracity of the proposed solution and the capability of the Contractor. The Deliverables of the High Level Solution Design Agreement represent the core documents required by the Contractor to provide the Detailed Design Deliverables;

c) the Project which is undertaken during the Detailed Design Phase; and

d) subject to the Customer's acceptance of the Contractors performance and related Deliverables under the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase (including negotiation of a Final Contract that may encompasses a number of the obligations of this Customer Contract) the Customer may, at its sole discretion, notify the Contractor of its intention to transition to the Final Contract. In such situation, this Customer Contract will lapse concurrently to the commencement of the Final Contract in accordance with clause 18.4 of the Additional Conditions.

1.8 On or around 10 August 2015 the Parties entered into a letter of intent (**LOI**) under which the Contractor supplied certain services and deliverables (**LOI Deliverables**) that are within the scope of the Deliverables that are to be supplied under this Customer Contract. The Parties acknowledge and agree that:

a) the LOI has been superseded by this Customer Contract and the LOI is of no further effect:

b) any sums paid under the LOI are taken to have been paid under this Customer Contract;

c) the terms of this Customer Contract apply to the LOI Deliverables; and

d) the LOI Deliverables are deemed to have been supplied under this Customer Contract and are Deliverables for the purposes of the Customer Contract.

2. Overview of scope of work and Project delivery model

2.1 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional services and deliverables agreed by the parties as the responsibility of the Contractor;

b) perform all other services functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i. reasonably related to the services or deliverables described in this PIPP; or
ii. reasonably required for the supply of the Deliverables described in this PIPP; and

c) complete the Project, and supply the Services and Deliverables in the following phases:

i. the Project Preparation Phase;
ii. the Detailed Design (Release 1) Phase; and
iii. the Initial Implementation (Release 1) Phase

3. Definitions

Capitalised terms which are not defined in this document have the meaning given to them in the Order Form or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

Acceptance Criteria means the criteria set out in Appendix G.

Build Phase means all activities required to deliver the Solution under the Final Contract

CIMS has the same meaning given to that term in the Additional Conditions.

CNS means CNS Solutions and Support GmbH;

Contract Price has the meaning given to that term in section 12.1.1 of this PIPP.

Delivery Risks means the actual or potential problems, issues or risks that may adversely affect the Contractor's ability to perform its obligations relating to the Project or the ROC Technology Solution.

Detailed Design means the Contractor's design of its Solution that has been developed as a Deliverable under the Customer Contract including the Detailed Design Documents.

Detailed Design Document means each document that is developed by the Contractor as part of the Detailed Design Phase and approved by the Customer.

Detailed Design Phase means the phase of work that includes the Detailed Design (Release 1) Phase and work associated with Release 2 and Release 3.

Detailed Design (Release 1) Phase means the phase described in section 5 of this PIPP.

Dispute means any dispute or disagreement between the Contractor and an Other Contractor (or a dispute between Other Contractors) arising out of or in connection with the Project. A reference to a Dispute, where the Dispute is partly resolved, refers to the unresolved part of the Dispute.

DTBRS means Detailed Technical Business Requirements Specification, as set in Appendix A (Part 2) of this PIPP;

DTBRS Addendum 2016.R2 means the DTBRS specifying the details and requirements of REM 2016.R2. This may be by way of an addendum to, separate to, or incorporated into the DTBRS for REM IMS.

DTTS has the same meaning given to that term in the Additional Conditions.

DMC means Data Management Client; the REM thick client for configuration management.

EMC means Emergency Management Client; the REM thick client for incident management.

Effective Date means the date the Contractor undertook early services under the letter of intent dated 10 August 2015

Environment has the same meaning as 'Customer Environment' in the Additional Conditions.

Entry Criteria means for a phase, the criteria that must be met before the Contractor is entitled to commence the work for that phase, as set out in this PIPP.

Final Contract has the same meaning given to that term in the Additional Conditions.

High-Level Design has the same meaning as the term in the Additional Conditions.

High Level Solution Design Agreement means the contract entered into between the Customer and the Contractor for the design services (which includes the High-Level Design) on or about 24 December 2014.

High Level Solution Design Documents means each document (including the High-Level Design) that is developed by the Contractor as part of the High Level Solution Design Phase and approved by the Customer as CSI.

High Level Solution Design Phase means the phase preceding the Detailed Design Phase.

Implementation & Maintenance Phase means the phase, if the Contractor is selected, for the implementation and maintenance of the Solution.

Initial Implementation (Release 1) Phase means the phase described in section 6 of this PIPP.

IMS has the same meaning given to that term in the Additional Conditions.

Initial Requirements means the requirements set out in Appendix A (Part 1) of this PIPP

Issues Register has the meaning given to that term in section 7B.4.1 of this PIPP.

Milestone Acceptance Form means the acceptance forms in the same or substantially the same form as Appendix E.

Other Contractors has the same meaning as 'Interfacing Contractor' in the Additional Conditions.

PCAR means the Project Concept and Review document, as set out in Appendix A (Part 2) of this PIPP.

Personnel means, as applicable, any director, officer, employee, agent, contractor, sub-contractor or professional advisers engaged in, or in relation to, the performance or management of the Customer Contract.

Project has the same meaning given to that term in section 1.5 of this PIPP.

Project Preparation Phase means the phase described in section 4 of this PIPP.

Project Schedule means the schedule set out in Appendix C which sets out the delivery dates for the Services and Deliverables during the Detailed Design Phase.

Release 1 means the implementation of and integration of IMS into the Customer's legacy environment.

Release 2 means the implementation of and integration of CIMS and DTTS into the Customer's legacy environment.

Release 3 means the integration of IMS, CIMS and DTTS systems with one another in the Customer's environment.

REM IMS means Rail Emergency Management Information Management System.

REM Mobile 2016.R1. means the mobile functionality included in REM 2016.R1 under Change Request 2, as described in the DTBRS.

REM Mobile Software means the items of Licensed Software set out in the Module 3 Order Form required for REM Mobile 2016.R1.

REM 2016.R1 means the Licensed Software upgraded by the Contractor to reflect the Customer's Requirements as described in the Technical Documents and includes REM Mobile 2016.R1.

REM 2016.R2 means the Licensed Software upgraded by the Contractor to reflect the Requirements as described in the GAP Analysis (REM 2016.R2) and Functional Specification (REM Release 2016.R2) and includes REM Mobile 2016.R2.

REM Mobile 2016.R2 means the mobile functionality included in REM 2016.R2 upgraded by the Contractor to reflect the Requirements as described in the GAP Analysis (REM Mobile 2016.R2) and Functional Specification (REM Mobile 2016.R2).

Requirements means the Initial Requirements as updated by the Updated Requirements.

Requirements Variation has the meaning given to that term in section 7.2.1 of this PIPP.

RFP has the same meaning given to that term in the Additional Conditions.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC Technology Solution has the meaning given to that term in section 1.2 of this PIPP.

SAD means the Solution Architecture Document, as set out in Appendix A (Part 2) of this PIPP.

Solution has the meaning given to that term in section 7.1.8 of this PIPP.

System Integrator means Ajilon Australia Pty Ltd (ABN 25 076 517 354).

Technical Documents means the following Documents set out in Appendix A (Part 2) of the PIPP:

a) Release 1 Architecture Specification for REM Rel 2016.1 V3.0;

b) Release 1 Functional Specification for REM Rel 2016.1 V3.0;

c) Release 1 Integration Specification for REM Rel 2016.1V3.0; and

d) Updated Release 1 Product Gap Analysis (High level business requirements) V5.0.

Updated Requirements means the Initial Requirements that are updated in the Detailed Design, including the Technical Documents, SAD and DTBRS. Once delivered under Change Request 3, the GAP Analysis (REM Mobile 2016.R2) and Functional Specification (REM Mobile 2016.R2) will form part of the Updated Requirements.

4. Project Preparation Phase

4.1 Overview and purpose of Phase

4.1.1 The purpose of the Project Preparation Phase is to validate the Contractor's strategic intent and the Solution scope.

4.1.2 During the Project Preparation Phase, plans and schedules are prepared and Project resources committed.

4.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Project Preparation Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Project Preparation Phase are approved by the System Integrator,

on or before relevant date(s) specified in the Project Schedule.

4.2 Entry Criteria

4.2.1 The Entry Criteria for the Project Preparation Phase is specified in the table below:

#	Criteria	Description
1.	Customer Contract execution	The Contractor and the Customer have executed the Customer Contract.
2.	Acceptance of High Level Solution Design	The Customer has accepted the Deliverables submitted under the High Level Solution Design Agreement or, where conditional acceptance was provided by the Customer, the Contractor has

	Deliverables	initiated remediation of the conditionally accepted Deliverables.
3.	Personnel	The Contractor provides details of the Contractor Personnel proposed for the Detailed Design (Release 1) Phase, as well as the Final Contract.

4.3 Services

4.3.1 The Contractor must supply the following Services as part of the Project Preparation Phase:

#	Description
1.	Prepare for Project kick-off, including: a. engaging the Personnel with the required skill sets to perform the Contractor's obligations under this PIPP; and b. collating and confirming the names and contact details of those Personnel with the Customer.
2.	All things necessary to prepare for the workshops to be conducted in the Detailed Design (Release 1) Phase, including: a. planning for the Detailed Design (Release 1) Phase workshops; b. assigning the Personnel with the required skill sets to facilitate the Detailed Design (Release 1) Phase workshops; c. requesting Customer Personnel based on required skill sets to attend Detailed Design (Release 1) Phase workshops; and d. preparing materials to facilitate the Detailed Design (Release 1) Phase workshops.
3.	Assess (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project and the ROC Technology Solution) and identify: a. any issues; and b. risks that may arise during the course of the Project and the ROC Technology Solution.
4.	Review and update the Issues Register to accurately and comprehensively identify all of the issues and risks that the Customer has identified relating to the Project and the ROC Technology Solution.
5.	Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Project Preparation Phase.
6.	Provide a list of technical requirements for Detailed Design (Release 1) Phase (e.g. remote access).
7.	Participate in the Customer's induction training or other courses as may be required, from time to time.
8	All things necessary to develop and supply the Deliverables described in section 4.4.

4.3.2 The Contractor must supply the Services which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.4 Deliverables

4.4.1 The Contractor must supply the following Deliverables as part of the Project Preparation Phase:

#	Deliverable	Description	Approver
1.	Detailed Design (Release 1) Phase workshops and planning documents	The following materials required to participate in the workshops required during the Detailed Design (Release 1) Phase. a. workshops and playback schedules; b. Project Schedule (including delivery dates for each Deliverable); c. pro forma workshop agenda; d. list of Contractor participants; and e. list of Customer participants roles.	The Customer (or its nominee)
2.	Templates and Standards	Agreement of Detailed Design documentation templates to be used by the Contractor.	The Customer (or its nominee)
3.	Detailed Design Phase Deliverables	Finalisation of the agreed list of Detailed Design (Release 1) Phase Deliverables that were conditionally accepted by the Customer during the High Level Solution Design Phase.	The Customer (or its nominee)
4.	Personnel	The Customer must approve the list of Specified Personnel proposed for the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase	The Customer (or its nominee)

4.4.2 The Contractor must supply the Deliverables which are part of the Project Preparation Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

4.5 Customer approval

4.5.1 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Project Preparation Phase in accordance with Additional Condition clause 5.

5. Detailed Design (Release 1) Phase

5.1 Overview and purpose of Detailed Design (Release 1) Phase

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design all of the Requirements (based on the Initial Requirements) and develop Detailed Design(s) for Release 1 of the ROC Technology Solution.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase are approved by the Customer (or its nominee),

on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Previous Phase Discharged	All Services that the Contractor is required to supply during the Project Preparation Phase have been supplied.
2.	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
1.	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Contractor as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensure all required Contractor Personnel are present at the meeting(s); c. chairing and presenting the Project meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtain participant approval of contents.
2.	Participate in all necessary workshops with the Customer, the System Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes in those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
3.	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
4.	Develop a Detailed Design for the ROC Technology Solution for Release 1.
5.	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Contractor's configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and

c. confirm that the scope of the ROC Technology Solution Release 1 to be implemented is understood by all parties.

6. Conduct a risk management workshop with the Customer, the System Integrator and all relevant Customer stakeholders to identify and agree on risks to the ROC Technology Solution Release 1.

7. Provide the Other Contractors with all the necessary assistance reasonably requested by the Other Contractors during the Detailed Design (Release 1) Phase.

8. Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the Project) to enable the Other Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4.

9. All other things necessary to develop and supply the Deliverables described in section 5.4 and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Deliverables

5.4.1 The Contractor is responsible for the following Deliverables with appropriate input from the System Integrator. Refer to the Appendix F for allocation of accountabilities and responsibilities.

5.4.2 The Transformation and Change Deliverables (as specified below in section 5.4.4.) are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Contractor during the High Level Solution Design Phase.

5.4.3 Where the Contractor must contribute to a Deliverable specified in section 5.4.4, the Contractor must work with, contribute to and provide all reasonable assistance requested by the System Integrator to complete the relevant Deliverable.

5.4.4 The Contractor must, in collaboration with the Other Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase:

#	Deliverable	Description	Approval
Technology Deliverables			
1.	Updated High Level Solution Design	Contribute to the updating of the High-Level Design Deliverable being developed by the System Integrator. The Updated High Level Solution Design must be updated to reflect the findings by the Contractor and System Integrator during the Detailed Design (Release 1) Phase and be based in the High Level Design submitted by the Contractor during the High Level Solution Design Phase.	The Customer (or its nominee)
2.	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms & technology required to deliver the functional & non-functional requirements.	The Customer (or its nominee)

		The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. Document Overview; b. Document Inputs; and c. Phase Scope; Systems architecture: a. High Level Conceptual Overview; b. Level 2 Business Processes; c. Application Usage View; d. System Integration View; e. Application Structure View; f. Information Architecture (including Reference data requirements); g. Infrastructure Usage View; h. Implementation and Deployment View; and i. Manual Integration; Rationale and justification for detailed design architectural approach: a. Rationale; b. Architecture Risks; c. Architecture Issues; d. Architecture Constraints; e. Architecture Assumptions; f. Architecture Decisions; and g. Architecture Dependencies;	
3.	Release 1 Functional Specification	The Release 1 Functional Specification defines the system's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS that shall be developed by the Customer during Detailed Design. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)

4	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1 Phase. The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability; e. manageability; f. performance; g. portability; h. reliability; i. reporting; j. scalability; k. security; and l. usability.	The Customer (or its nominee)
5.	Release 1 Integration Specification	The Release 1 Integration Specification describes the high level integration points between the REM IMS and other systems. A detailed interface specification for each interface will be created by the Systems Integrator during the Build Phase. The following subjects are included in the Release 1 Integration Specification, one entry for each integration service : a) high level data flows between applications to support the business processes; b) data objects required by consumer – request; c) data objects available from consumer – response; and d) data object transformations required. The Release 1 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each interface to be created by the Systems Integrator during the Build Phase will describe the relevant Acceptance Criteria for each interface.	The Customer (or its nominee)
6.	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and	The Customer (or its nominee)

		governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	
7.	Release 1 Data Management Plan	This document defines: a) the design, build, control and data management activities required to ensure data quality of all data (reference data, master data and transactional data) within REM IMS, based on business rules provided by the Customer, and effective and efficient system integration of REM IMS with other Customer systems; b) a high-level approach to management of all data within REM IMS which aligns with the approach outlined in the SAD.	The Customer (or its nominee)
8.	Release 1 Data Technical Analysis Outputs	Contribute to Release 1 Data Technical Analysis Outputs must include: a. Data Requirement Classifications (Master data, Migration Data, BI data); b. Data Migration Requirements and Rules; and c. Data quality definition (at data attribute levels). Release 1 Data Technical Analysis Outputs also includes: 1. for each type of reference data and master data used by REM IMS (as appropriate): a) the real-world object type represented by that data set; b) the recommended data maintenance method(s) in REM IMS; c) the relevant SME(s), functional owner(s), source of requirement and/or Customer source from which the data may be obtained; d) whether REM IMS can play the role of DMA source for that data; e) the volatility of that data; and f) data translations (if any) required to integrate with existing Customer systems 2. for each type of master or reference data requested by REM IMS from other Customer systems: a) what data is required in the request and response messages; b) the business rules governing each message; and c) how those business rules are enforced; 3. for each type of transactional data flowing	The Customer (or its nominee)

		between REM IMS and another system (in either direction): a) the source and target systems; b) the message type and message header type; c) any encryption, security or certification considerations; d) the methods used to handle non-compliant data in the source system; e) any record selection filters required; and f) any record level transformations required.	
9.	Updated Technology Implementation Strategy	Contribute to the development of the Updated Technology Implementation Strategy being developed by the System Integrator. The Updated Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the ROC Technology Solution, including, at a minimum: a. personnel & organisation; b. implementation approach, including: i. releases; ii. system verification and validation; iii. system change management; iv. release & deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for 'go-live'; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function.	The Customer (or its nominee)
10.	Release 1 Technology Implementation Plan (Template)	The Release 1 Technology Implementation Plan (Template) will be developed and agreed. The plan will outline the plan approach for the roll out of the relevant components for Release 1. The final version of Release 1 Technology Implementation Plan will be developed during the Build Phase and provide a detailed plan and	The Customer (or its nominee)

		schedule of activities to deploy the Solution into the Environment. It must address training, development of, and installation of the REM IMS into the Environment, cutover and roll back. Note: The final version must be provided at least 40 Business Days prior to the anticipated deployment date for Release 1.	
11.	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the System Integrator. The Technology Test Strategy refers to the program test framework and must include the following: a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability. Assumptions, test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document Revision & History; and i. Approvals.	The Customer (or its nominee)
12.	Updated Project Management Plan	Contribute to the development of the Updated Project Management Plan (UPMP) being developed by the System Integrator. The UPMP shall be based on the project management plan submitted by the Contractor during the High Level Solution Design Phase and updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The UPMP must specify, as a minimum, the following: a. current project status; b. project overview; c. scope & deliverables;	The Customer (or its nominee)

		d. solution approach, including: I. architecture & phase approach; II. organisation Change management; and III. delivery approach; e. budget & schedule; f. dependencies; g. roles & responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 7.4; and k. key risks & issues.	
13.	RACI	Contribute to the RACI Deliverable being developed by the System Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Other Contractors and the Customer. Note an initial draft of the Detailed Design document deliverables RACI is listed in Appendix F.	The Customer (or its nominee)
14.	Agreed Final Contract	The Final Contract will incorporate certain detailed design activities. The Final Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor
15.	Detailed Implementation & Maintenance Phase PIPP	The Detailed Design, Implementation and Support PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	The Customer and Contractor
16.	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)
17.	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the System Integrator. The Release 1 System Test Plan describes how the testing will be delivered for the Release 1 System Test phase and	The Customer (or its nominee)

		must include: a. Test plan identifier; b. References; c. Introduction; d. Test Objectives; e. Test items; f. Software risk issues; g. Features to be tested and traceability; h. Features not to be tested and reasons; i. Approach including the use of stubs, simulators etc; j. Item pass/fail criteria (if different from Strategy); k. Suspension criteria and resumption requirements (if different from Strategy); l. Test deliverables; m. Environmental needs; n. Staffing and training needs (if different from Strategy); o. Responsibilities; p. Schedule of tasks and assigned staff; q. Planning risks and contingencies; r. Approvals; and s. Glossary.	
18.	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the System Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)
19.	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the System Integrator. The Technology Environment Management Strategy details the process for managing end to end	The Customer (or its nominee)

environments.

This document contains processes for:

a. Booking and reserving test systems;
b. Tracking environment changes;
c. Managing environment contention;
d. Code/Defect management (Code promotion processes);
e. Environment scheduling;
f. Configuration tracking;
g. Data Management (Extracts, transforms loads); and
h. Managing interdependent projects.

Transformation and Change Deliverables

20.	Operating Model	Contributing to the development of the Operating Model being developed by the System Integrator. The Operating Model must document and /or identify: a. best practice levels 2-4 process flows; and b. capability gaps in systems and processes. The process model will conform to best practice principles. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation. Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Best practice process flows Deliverable description:** The best practice process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following: a. best practice levels 2-4 process flows;	The Customer (or its nominee)

		b. validation of processes against real life scenarios . **Capability gaps in systems and processes deliverable description:** Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended best practice process flows to confirm the changes to processes and capabilities. The key focus of this deliverable will be on the level 4 gaps and/or variations in processes as dictated by the out of the box technology processes.	
21.	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)
22.	Change Impact Analysis (Release 1)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions (note updated assumptions section): a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities	The Customer (or its nominee)

		assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes within the ROC. A Change Impact Analysis will accompany the Release 1.	
23.	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the System Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)

5.4.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6. Initial Implementation (Release 1) Phase

6.1 Overview and purpose of Initial Implementation (Release 1) Phase

6.1.1 The purpose of the Initial-Implementation (Release 1) Phase is to:

a) enable the Contractor to commence the development and implementation of the Requirements into the REM product road-map so that the next release of the Licensed Software can fulfil the specifications and functionality specified in the Technical Documents; and

b) ensure the Licensed Software is available for testing in the System Integration Test Environment (SIT).

6.1.2 The scope of the Services and Deliverables under the Initial Implementation (Release 1) Phase explicitly excludes integration of the Licensed Software into the SIT environment, testing on-site and adaptation of the interfaces with Other Contractors' software.

6.1.3 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Initial Implementation (Release 1) Phase are supplied and completed;

b) all Deliverables that it is obliged to supply under Initial -Implementation (Release 1) Phase are approved by the Customer (or its nominee); and

c) the Licensed Software delivered under section 6.4 includes each of the Updated Requirements,

on or before the relevant date(s) specified in the Project Schedule.

6.2 Entry Criteria

6.2.1 The Entry Criteria for the Initial Implementation (Release 1) Phase is specified in the table below:

#	Criteria	Description
1.	Detailed Design (Release1) Phase completed to necessary level to start the Initial Implementation (Release 1) Phase	All Services that the Contractor is required to supply during the Detailed Design (Release 1) Phase have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1) Phase.
2.	Previous Phase Deliverables Completed	The Customer has Accepted all Deliverables supplied in the Detailed Design (Release 1) Phase or, in the Customer's sole and absolute discretion, are at the necessary level to start the Initial Implementation (Release 1) Phase. Where one or more Deliverables in the Detailed Design (Release 1) Phase have not been Accepted by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.

6.3 Services

6.3.1 Subject to section 7.7, the Contractor must supply the following Services as part of the Initial Implementation (Release 1) Phase:

#	Description
1.	Adaptation of the Licensed Software to reflect the Customer's Requirements for REM 2016.R1 as specified in the Technical Documents.
1A	Customisation of REM Mobile 2016.R1 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis for REM Mobile 2016.R1 v1.00, based on the DTBRS.
2.	Document and define system interfaces as detailed in the Technical Documents.
3.	Inclusion of four (4) additional Customer gap features that have been specified during the Detailed Design (Release 1) Phase into the Licensed Software. Refer to the document titled "DTBRS GAP Analysis Version 3.0" for a list of the relevant items identified with a planned delivery date of 30/04/2016.

4. Preparation of off shore testing of the Licensed Software that shall include setup of in-factory test environment

5. **On site Test Preparatory Activities (REM 2016.R1)**

a) set up test of non-Production Licensed Software;
b) definition of interfaces and Software components for testing;
c) analysis and generation of test data in relation to REM2016.R1 Licensed Software; and
d) Set up test of interfaces according to Release 1 Integration Specification.

5A **Internal Contractor System Integration & Test for REM Mobile Software**

a) REM Mobile Software installation and REM Mobile Software Update;
b) configuration of Interfaces and Licensed Software components;
c) test of interface;
d) boundary testing (e.g. timeouts, connection issues, reconnection, data mismatch); and
e) capturing of log-files and coordination with the Contractor's factory.

All listed services are performed on the Contractor's internal REM Development environment before SIT (which will be within the scope of the Final Contract).

For clarity, as set out in section 6.1.2 above, the scope of the Services under the Initial Implementation (Release 1) Phase excludes integration of the Licensed Software into the SIT environment, testing on-site and adaptation of the interfaces with Other Contractors' software.

6. **Data Profiling Support:**

Support of data profiling activities performed by the Systems Integrator comprising 4 workshops and preparation for the same.

7. **Data Management Support (On-shore & Off-Shore):**

Technical support of the Contractor's data management team

7A **Configuration Data Import for REM Mobile 2016.R1. (off-site):**

Initial import of configuration data into the REM Mobile 2016.R1 data base.

8. **Master Data Import / Export (offsite) support**

Support of the process of master data gathering, preparation and importing into the different REM system environments in the different project stages, including the following activities:

a) master data input as defined in an XLS-template provided by the Contractor;
b) clarification of data structure specified in the XLS template;
c) dry-run of the provided Master data XLS template on the relevant development system;
d) one time import of the XLS-template to database on the Customer's Environment (further imports based on database dumps performed by SIT & System test) (Note: SAT and UAT will be performed in the implementation phase of the Final Contract;

Additional required support can be ordered by the Customer via Change Request

9. **Project Management as detailed in Appendix B**

10. **Solution Architecture Support as detailed in Appendix B**

11. **System Engineering:** Support of the System Integrator's System Administrator and maintenance of pre-Implementation environments until handover to the Customer of the master data import / export (on-site).

12. **Solution Consultancy Support as detailed in Appendix B**

13. **Quality and Requirements Management as detailed in Appendix B**

14. **System Administration Training:** Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of the REM IMS.

    The Contractor will provide and run a single course over 3 days, for up to 12 attendees.

    The aim of the course is to provide attendees with training enable the attendees to:

    a) identify components of the REM IMS and assign them to system structures;
    b) explain the functionality and purpose of the individual components of REM IMS, including system interfaces;
    c) interpret operational and technical messages of the REM IMS and analyse causes;
    d) carry out maintenance working steps for administration of the REM IMS components according to the system administration manual;
    e) carry out software update procedures for the REM IMS;
    f) name, readout and interpret relevant log files of the REM IMS;
    g) assess the technical and operational effects of these actions; and
    h) fulfil 2nd level support requirements.

15. **Application Administration Training:** The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of the incident management system for REM 2016.R1.

    The aim of the course is to provide attendees with training enable the attendees to:

    a) explain the functionality of REM 2016.1.R1;
    b) explain the functionality of the REM IMS Data Management Client;
    c) explain the functional data structure of REM 2016.R1;
    d) maintain REM 2016.R1 configuration data;
    e) configure the responsibility model;
    f) configure the track network;
    g) configure workflows; and
    h) carry out user, role and group administration.

16 **System Administration:**

The System Administrator is responsible for all installation and administration works related to the Licensed Software in the Configuration, REM Development, TIBCO-Sydney Trains (Customer component only), SIT, UAT and training environments. This Service ends on 31 August 2016, unless extended by mutual agreement. The scope

of the System Administrator during the Initial Implementation (Release 1) Phase and Final Contract are as set out below.

Under Initial Implementation (Release 1) Phase (under this Customer Contract)

The scope of the System Administrator under the Initial Implementation (Release 1) Phase includes:

a) performing application related database setups, including:
   i. set-up of database instances;
   ii. set-up of database users;
   iii. set-up of schemes; and
   iv. set-up of Oracle database recovery and backup procedures (optional, depending on system operation model);
b) importing and exporting of database dumps:
   i. as preparation of the test systems;
   ii. as preparation for the production environment; and
   iii. for debugging and Defect reproducing reasons;
c) performing database schema updates, as required;
d) installation and configuration of monitoring tools according to Customer standards; and
e) setup, management and tracking of users and associated access levels

Under the Final Contract (Implementation and Support)

The scope of the System Administrator under the Final Contract will include:

a) installing and deploying REM application versions of the Licensed Software on the Customer environments, including:
   i. REM Incident Management software and additional necessary software packages; and
   ii. Java and Tomcat;
b) configuration of the REM application on system level, including various configuration and start up files;
c) performing application related database setups, including:
   i. set-up of database instances;
   ii. set-up of database users;
   iii. set-up of schemes; and
   iv. set-up of Oracle database recovery and backup procedures (optional, depending on system operation model);
d) importing and exporting of database dumps:
   i. as preparation of the test systems;
   ii. as preparation for the production environment; and
   iii. for debugging and Defect reproducing reasons;
e) performing database schema updates, as required;
f) installation and configuration of monitoring tools according to Customer standards;
g) integration with sub-systems and TIBCO, including:
   i. supporting the System Integrator and engaged Customer application support teams;
   ii. configuration of REM instance connectivity;
   iii. assistance in configuration of REM backend; and
   iv. supporting and system configuration of direct integrations;
h) performing basic sanity testing of the integration and configuration;
i) validating REM instance configuration via point to point connectivity testing;
j) verifying all required connectivity from/to REM instance on each non-production environment;
k) recording, verifying, investigating and assisting to resolve all SEV1 and SEV2

defects (the definition of which will be agreed by the Parties prior to entry into the Final Contract) recorded during system shakeout in each environment;

l) recording, verifying, investigating and assisting to resolve all REM application related Defects recorded during each test phase;

m) System level issue tracing, including:
   i. identification of problem sources;
   ii. log file locating;
   iii. log file extraction and handling;
   iv. creation of defect description;
   v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality); and
   vi. filing an error report in the Contractor's Defect reporting tool ITMS.

For clarity, the work outlined above as being within the scope of the Final Contract will be performed under the Final Contract and not under this Customer Contract.

17 Adaptation of the Licensed Software to reflect the Customer's Requirements for REM Release 2016.R2 as specified in the GAP Analysis (REM Release 2016.R2), GAP Analysis (REM Mobile 2016.R2), Functional Specification (REM Release 2016.R2), and Functional Specification (REM Mobile 2016.R2)and REM Mobile 2016.R2.

18 Customisation of REM Release 2016.R2 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2 based on the DTBRS (including the 2016.R2 Addendum) which incorporates REM Release 2016.R2 and REM Mobile 2016.R2.

19 Document and define system interfaces as detailed in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2.

20 Preparation of off shore testing of the Licensed Software that shall include setup of system test environment (factory testing) for REM Release 2016.R2 and REM Mobile 2016.R2.

21 Customisation of REM Mobile 2016.R1 to enable configuration by QR code

22 Implementation of application parameters to:

a) download the required parameters for a number of different configurations;
b) provide respective links for QR-Code configuration capability;
c) implement a setting to switch off QR code capability for production rollout.

23 Signature process services including:

a) providing a REM Mobile 2016.R1 certificate for the use on a maximum of twenty Sydney Trains owned test-devices; and
b) management of iPhone UID's.

Service provided until December 15 2016 unless otherwise extended in writing between the Parties.

24 Configuration process services including:

a) Creation of new QR codes referring to new parameter sets for different test scenarios and/or non-production environments;
b) Set-up and managing the deployment tool (Hockey) for the non-production environment; and
c) Configuration of REM Mobile 2016.R1 using Hockey for Sydney Trains non-production environments.

Service provided until December 15 2016 unless otherwise extended in writing between the Parties.

25 Deployment process services including:

a) Providing a signed application file (*.ipa file) for management in Hockey.
   a. This file can uploaded to Hockey without further modification.
b) Management of Hockey and configuration of REM Mobile 2016.R1 using Hockey for Sydney Trains non-production environments.
   a. Includes rollout management.

Service provided until December 15 2016 unless otherwise extended in writing between the Parties.

6.3.2 The Contractor must supply the Services which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

6.4 Deliverables

6.4.2 The Contractor is responsible for the following Deliverables:

#	Deliverable	Description	Approver
1	REM System (Software Delivery Stage 2016.R1)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery 2016.R1. The software will not be implemented in to the SIT environment; it will only be made available "to be" implemented in to the SIT environment subject to the signing of the Final Contract. The Deliverable for the purpose of this phase is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.	The Customer (or its nominee)
2.	REM 2016.R1	Release of the Licensed Software incorporating the Requirements for REM 2016.R1 and REM Mobile 2016.R1.	The Customer (or its nominee)
3	Test Documentation *	Provision of: a) Test Summary Report for System Tests provided by the Contractor; b) Test Objective Matrix for SAT; and c) Test cases (including Test Systems) SAT	The Customer (or its nominee)
4	Interface Documentation*	Documentation for REM 2016.R1 to: a) SIRI interface; b) Notification interface; and	The Customer (or its nominee)

		c) Shadow DB interface, all as further documented in the Release 1 Integration Specification.	
5	Data Model documentation*	Documentation for the REM data model	The Customer (or its nominee)
6	System Administration Training Material*	Training material for System Administration and Application Administration Training (on USB Medium), comprising: a) Trainer PowerPoint slide pack; and b) Server manual.	The Customer (or its nominee)
7	User Manuals*	System Administration Manual (Operator View) comprising: a) User Manual for IMC; b) User Manual for DMC; and c) User Manual for Webportal.	The Customer (or its nominee)
8	Test Procedure Book (REM Mobile 2016.R1) *	The Contractor will create the Test Procedure Book for REM Mobile 2016.R1 SAT.	The Customer (or its nominee)
9	Test Objective Matrix for SAT (REM Mobile 2016.R1) *	The Test Objective Matrix (TOM) demonstrates test coverage to meet Customer requirements, specifications and designs. The Contractor will create the Test Objective Matrix for REM Mobile 2016.R1 SAT in accordance with the Contractors' existing in house processes.	The Customer (or its nominee)
10	Functional Specification (REM Mobile 2016.R1) *	The Contractor will create the Functional Specification (REM Mobile 2016.R1) document. The Functional Specification (REM Mobile 2016.R1) defines required capabilities, appearance and interaction with users for the mobile notifications solution for the Incident Management System in ROC Release 1. The functional specification will be used to validate that REM Mobile 2016.R1 meets the updated DTBRS developed by the Customer. Functional specifications relate to the following: a. function involving user interaction and its user interface; and b. function which is unattended processing such as batch processing,	The Customer (or its nominee)
11	Gap Analysis (REM Mobile 2016.R1) *	The Contractor will create the GAP Analysis (REM Mobile 2016.R1). The GAP Analysis (REM Mobile 2016.R1) shall be based on the DTBRS to reflect the findings by the	The Customer (or its nominee)

		Contractor and Other Contractors (as applicable). The GAP Analysis (REM Mobile 2016.R1) Deliverable specifies the gaps between the detailed requirements for the mobile notifications solution for the Release 1 REM IMS and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required, identify any gaps that will not be resolved, and present a forecast of the impact to the Customer business.	
12	User Manual REM Mobile 2016.R1 *	The user manual includes a general description of the functions and capabilities of the mobile application and contains all the basic information for the users to familiarise themselves with the mobile application (REM Mobile).	The Customer (or its nominee)
13	REM System/Software Delivery (REM Release 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery REM Release 2016.R2. Note: The software will not be implemented in to any Sydney Trains environment; The Deliverable for the purpose of this phase is receipt by the Customer of executable software on physical media. Acceptance of REM Release 2016.R2 will be undertaken during the testing phases of the ROC Release 3.	The Customer (or its nominee)
14	REM System/Software Delivery (REM Mobile 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM Mobile as defined for Software Delivery REM Mobile 2016.R2. Note: The software will not be implemented in to any Sydney Trains environment; The Deliverable for the purpose of this phase is receipt by the Customer of executable software on physical media. Acceptance of REM Mobile 2016.R2 will be undertaken during the testing phases of the ROC Release 3.	The Customer (or its nominee)
15	Gap Analysis (REM Release 2016.R2)	Contractor will create the GAP Analysis REM Release 2016.R2 The GAP Analysis (REM 2016.R2) shall be based on the DTBRS (including the 2016.R2 Addendum) to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase The GAP Analysis (REM 2016.R2) Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to:	The Customer (or its nominee)

		a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business. The above document may be by way of an amendment to the existing Gap Analysis or by a new document.	
16	Gap Analysis (REM Mobile 2016.R2)	Contractor will create the GAP Analysis REM Mobile 2016.R2 The GAP Analysis (REM Mobile 2016.R2) shall be based on the DTBRS (including the 2016.R2 Addendum) to reflect the findings by the Contractor and Other Contractors (as applicable). The GAP Analysis (REM Mobile 2016.R2) Deliverable specifies the gaps between the detailed requirements for the mobile notifications solution for the Release 1 REM IMS and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required, identify any gaps that will not be resolved, and present a forecast of the impact to the Customer business. The above document may be by way of an amendment to the existing Gap Analysis or by a new document.	The Customer (or its nominee)
17	Functional Specification (REM Release 2016.R2)	Contractor will create the REM Release 2016.R2 Functional Specification document. The REM Release 2016.R2 Functional Specification defines the system's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS (including the 2016.R2 Addendum). Functional specifications relate to the following: a. Function involving user interaction and its user interface; and b. Function which is unattended processing such as batch processing. The above document may be by way of an amendment to the existing Functional Specification or by a new document.	The Customer (or its nominee)

18	Functional Specification (REM Mobile 2016.R2)	Contractor will create the REM Mobile 2016.R2 Functional Specification document. The Functional Specification (REM Mobile 2016.R2) defines required capabilities, appearance and interaction with users for the mobile notifications solution for the Incident Management System in ROC Release 3. The functional specification will be used to validate that REM Mobile 2016.R2 meets the updated DTBRS developed by the Customer. Functional specifications relate to the following: a. function involving user interaction and its user interface; and b. function which is unattended processing such as batch processing, The above document may be by way of an amendment to the existing Functional Specification or by a new document.	The Customer (or its nominee)
19	Test Summary Report for System Test (REM Release 2016.R2)	Contractor will provide a summary of results from the COTS product vendor System Testing for REM Release 2016.R2 including list of observations and defects in accordance with the COTS vendors' standard documentation.	The Customer (or its nominee)
20	Test Summary Report for System Test (REM Mobile 2016.R2)	Contractor will provide a summary of results from the COTS product vendor System Testing for REM Mobile 2016.R2 including list of observations and defects in accordance with the COTS vendors' standard documentation.	The Customer (or its nominee)
21	Update of Interface Documentation	Contractor will update the Interface Documentation for REM 2016.R2 to include: a) SIRI interface; and b) Notification interface.	
22	Update of Data Model documentation	Contractor will update the Data Model Documentation to reflect changes implemented as a part of 2016.R2.	
23	Update of User Manuals	Contractor will update of the User Manuals for; a. EMC b. DMC c. REM Mobile d. Server Installation	
24	Requirements Traceability Matrix for REM 2016.R2	The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for REM Release 2016.R2 must include the following: a. an outline of the business requirements/	

		capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases.	
25	REM Mobile Software Update (2016.R1)	Customisation of REM Mobile 2016.R1 to enable configuration by QR code.	The Customer (or its nominee)
26	Configuration Process Documentation	Documentation including details regarding the QR code functionality and how to change a configuration.	The Customer (or its nominee)
27	Deployment Process Documentation	Documentation of the required steps to configure the application (*.ipa file) in Hockey and deployment of REM Mobile 2016.R1 onto Sydney Trains iPhones with the use of Hockey.	The Customer (or its nominee)
28	Hand-over to support Documentation (handover of non-production processes & procedures)	The Hand-Over to Support documentation covers all necessary information for the non-production mobile deployment services to be taken over by the Customer. A one day hands-on handover training.	The Customer (or its nominee)
29	Update to existing documentation as a result of the non-production REM Mobile ~~D~~deployment activities.	Update of the following documents for REM Mobile 2016.R1 Deployment: a) Update of REM Mobile Functional Specification; b) Update of REM Mobile Test Objective Matrix and Test Procedure Book; and c) Update of REM Mobile User Manual.	The Customer (or its nominee)

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract that the Parties anticipate executing by 29 February 2016.

6.4.3 The Contractor is responsible for supporting the following Deliverables that belong to the Systems Integrator:

#	Deliverable	Description	Approver
1.	Updated Implementation Strategy	Contribute to the Updated Implementation Strategy document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
2.	Updated Project Management Plan	Contribute to the Updated Project Management Plan being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase	The Customer (or its nominee)
3.	Updated Architecture Specification	Contribute to the Updated Architecture Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1)	The Customer (or its nominee)

		Phase.	
4.	Updated Integration Functional Specification	Contribute to the Updated Integration Functional Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
5.	Updated Release 1 Data Technical Analysis Outputs	Contribute to Updated Data Technical Analysis being developed by the System Integrator. Outputs must include: a. data requirement classifications (Master data, Migration Data, BI data); b. data dictionary (Source and target data systems); c. data migration requirements; and d. data quality rules definition (at data attribute levels).	The Customer (or its nominee)
6.	Updated Data Management Plan	Contribute to the Updated Data Management Plan document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)
7.	Release 1 Technology Implementation Plan	Contribute to the Technology Implementation Plan document describing the plan for the roll out of the relevant components for Release 1 and providing a detailed plan and schedule of activities to deploy the solution into the Environment. It must address training and installation of the REM IMS into the Environment, cutover and roll back. The final version must be provided 10 weeks prior anticipated deployment date for Release 1.	The Customer (or its nominee)
8-.	Release 1 Functional Specification	Contribute to the Functional Specification document being developed by the System Integrator incorporating the information learnt during the Detailed Design (Release 1) Phase.	The Customer (or its nominee)

6.4.4. The Contractor must supply the Deliverables which are part of the Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7. Acceptance, Change Request and Assumptions

7.1 Acceptance

7.1.1 The Contractor must:

a) in collaboration with the Customer and Other Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Other Contractors (as required) to ensure that all Deliverables that are part of the Detailed Design (Release 1) and Initial Implementation (Release 1) Phase are fit for purpose and meet the agreed Acceptance Criteria.

7.1.2 Subject to section 7.1.10, the Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Implementation & Maintenance Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

7.1.3 Deliverables will be reviewed by the Customer (or the System Integrator acting as the Customer's nominee). Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with clause 5 of the Additional Conditions, the System Integrator will request the Customer's endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

7.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

a) Milestone Acceptance Forms must be signed in writing by the Contractors Project Director and Customers Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customers delegate; notification by email of the endorsement is sufficient.

d) Contractors Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) the Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in clause 5.4 of the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

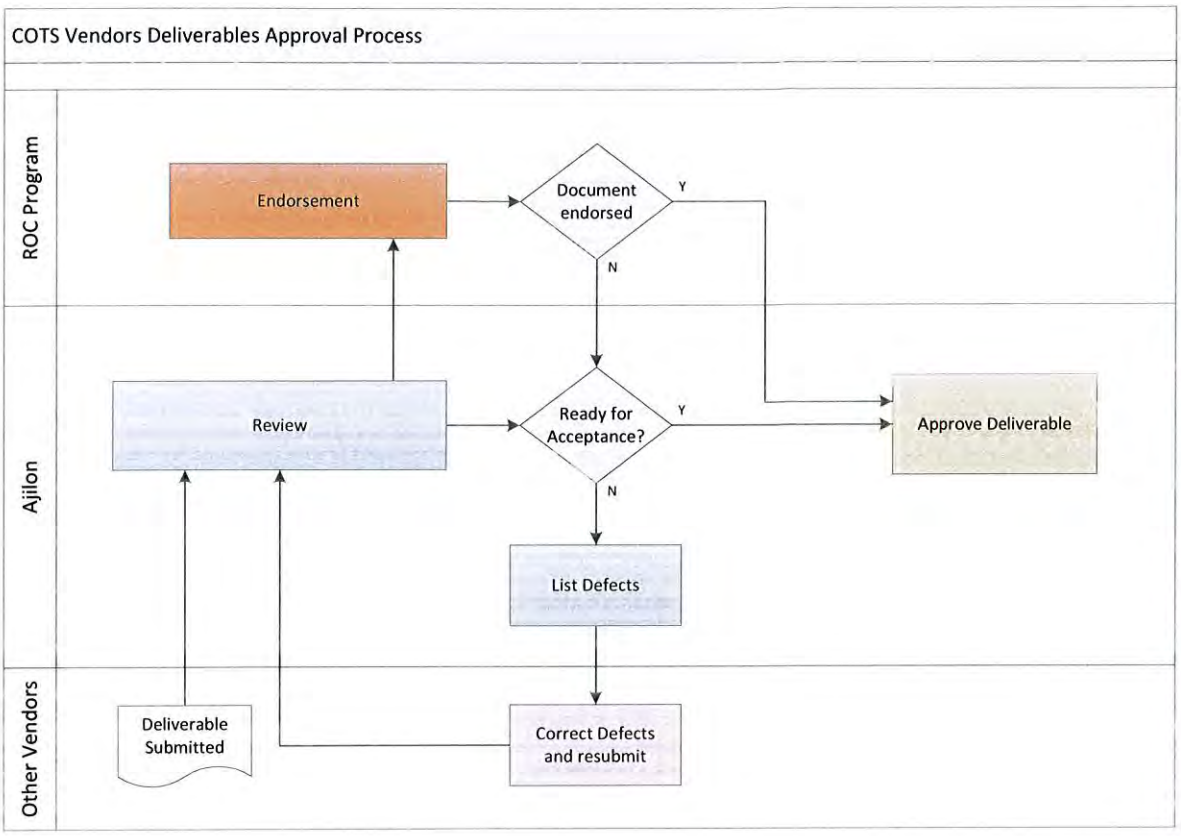
h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of defects (tracked in a spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



7.1.5 The Contractor must supply the Deliverables which are part of the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

7.1.6 The Contractor must ensure that the Solution, as it applies to REM IMS described in the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design (Release 1) Phase, Initial Implementation (Release 1) Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

7.1.7 Subject to section 7.1.10, the Customer (or its nominee) must review a Deliverable submitted during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase in accordance with clause 5 of the Additional Conditions.

7.1.8 The Detailed Design supplied by the Contractor under the Detailed Design (Release 1) Phase and the Deliverables supplied by the Contractor under the Initial Implementation (Release 1) Phase and endorsed/approved by the Customer/System Integrator (as applicable) will be the 'Solution' for the purposes of this PIPP.

7.1.9 For the purposes of the Customer Contract the 'Contract Specifications' for the Solution will be:

a) the Initial Requirements (as amended or updated in any documents supplied under the Detailed Design (Release 1) Phase and approved by the Customer);

b) the specifications, designs, any performance standards or other requirements for the Solution set out in any of the documents supplied by the Contractor in the Detailed Design (Release 1) Phase and approved by the Customer; and

c) any other the requirements relating to the Deliverables or the Solution as set out in this PIPP.

7.1.10 The Contractor agrees that any review, comment, approval, endorsement or election (including an election in respect of Detailed Design) or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect other Services or Deliverables under this Customer Contract, including in respect of the Detailed Design (Release 1) Phase;

b) does not limit or affect the provision of the Contractor's warranties or indemnities

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

7.2 Change Request

7.2.1 If:

a) during the Detailed Design (Release 1) Phase or the Initial Implementation (Release 1) Phase the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Initial Requirements (**Requirements Variation**); and

b) that Requirements Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

7.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 7.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits the Detailed Design,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Requirements Variation.

7.3 Not used

7.4 Summary Table of Deliverables and expected delivery dates

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Release 1) Phase and documented in the associated draft Project Schedule)

Detailed Design (Release 1) Phase

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 1	Updated High Level Solution Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 2	Release 1 Architecture Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 3	Release 1 Functional Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 4	Release 1 Non-Functional Design	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 5	Release 1 Integration Specification	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 6	Project Communication Plan for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables as specified in the Project Schedule.*
WBS 7	Release 1 Data Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 8	Release 1 Data Technical Analysis Outputs	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 9	Updated Technology Implementation Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 10	Release 1 Technology Implementation Plan (Template)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 11	Technology Test Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 12	Updated Project Management Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 13	RACI	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 14	Agreed Final Contract	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 15	Detailed Implementation & Maintenance Phase PIPP	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 16	Updated Release 1 Product Gap Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 17	Release 1 System Test Plan	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Detailed Design (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 18	Requirements Traceability Matrix for Release 1	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 19	Technology Environment Management Strategy	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 20	Operating Model	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 21	Draft recommended ROC organisational structure	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 22	Change Impact Analysis (Release 1)	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*
WBS 23	Release 1 Training Needs Analysis	*Document*	*As specified in the draft Project Schedule*	*15 Business Days after delivery of the Deliverables specified as specified in the Project Schedule.*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 24	REM System Software Delivery Stage 2016.R1	*Software*	*30 April 2016*	*30 April 2016*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 25	REM 2016 R1 Licensed Software	*Software*	*31 May 2016*	*31 May 2016*
WBS 26	Test Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 27	Interface Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 28	Data model Documentation*	*Document*	*31 May 2016*	*31 May 2016*
WBS 29	System Administration Training Material*	*Document, PowerPoint Slides*	*31 May 2016*	*31 May 2016*
WBS 30	User Manuals*	*Document*	*31 May 2016*	*31 May 2016*
WBS 31	Updated Implementation Strategy	*Document*	*31 May 2016*	*31 May 2016*
WBS 32	Updated Architecture Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 33	Updated Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS 34	Updated Integration Functional Specification	*Document*	*31 May 2016*	*31 May 2016*
WBS35	Updated Release 1 Data Technical Analysis Outputs	*Document*	*31 May 2016*	*31 May 2016*
WBS 36	Updated Data Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 37	Updated Project Management Plan	*Document*	*31 May 2016*	*31 May 2016*
WBS 38	Release 1 Technology Implementation Plan	*Document*	*31 May 2016*	*31 May 2016*

Initial Implementation (Release 1) Phase				
Deliverable ID	**Deliverable Name**	**Format**	**Expected Delivery Date**	**Expected AAD**
WBS 39	Test Procedure Book (REM Mobile 2016.R1) *	*Document*	*15 May 2016*	*15 May 2016*
WBS 40	Test Objective Matrix for SAT (REM Mobile 2016.R1) *	*Document*	*15 May 2016*	*15 May 2016*
WBS 41	Functional Specification (REM Mobile 2016.R1) *	*Document*	*15 April 2016*	*22 April 2016*
WBS 42	Gap Analysis (REM Mobile 2016.R1) *	*Document*	*14 March 2016*	*21 March2016*
WBS 43	User Manual REM Mobile 2016.R1 *	*Document*	*31 May 2016*	*31 May 2016*

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract.

WBS 44	REM System/Software Delivery (REM Release 2016.R2)	*Software*	*31 Oct 2016*	*15 Nov 2016*
WBS 45	REM System/Software Delivery (REM Mobile 2016.R2)	*Software*	*31Oct 2016*	*15 Nov 2016*
WBS 46	Gap Analysis (REM Release 2016.R2)	*Document*	*30 Aug 2016*	*15 Sep 2016*
WBS 47	Gap Analysis (REM Mobile 2016.R2)	*Document*	*30 Aug 2016*	*15 Sep 2016*
WBS 48	Functional Specification (REM Release 2016.R2)	*Document*	*15 Aug 2016*	*30 Aug 2016*
WBS 49	Functional Specification (REM Mobile	*Document*	*15 Aug 2016*	*30 Aug 2016*

	2016.R2)			
WBS 50	Test Summary Report for System Test (REM Release 2016.R2)	*Document*	*15 Nov 2016*	*01 Dec 2016*
WBS 51	Test Summary Report for System Test (REM Mobile 2016.R2)	*Document*	*15 Nov 2016*	*01 Dec 2016*
WBS 52	Update of Interface Documentation	*Document*	*15 Dec 2016*	*15 Jan 2017*
WBS 53	Update of Data Model documentation	*Document*	*15 Dec 2016*	*15 Jan 2017*
WBS 54	Update of User Manuals	*Document*	*15 Dec 2016*	*15 Jan 2017*
WBS 55	Requirements Traceability Matrix for REM 2016.R2	*Document*	*30 Aug 2016*	*15 Sep 2016*
WBS 56	REM Mobile Software Update (2016.R1) to enable QR-Code for non-production deployment	*Software*	*15.08.2016*	*30.08.2016*
WBS 57	Configuration Process Documentation	*Documentation*	*15.12.2016*	*01.12.2016*
WBS 58	Deployment Process Documentation	*Documentation*	*01.12.2016*	*15.07.2016*
WBS 59	Hand-over to support Documentation (handover of non-production processes & procedures)	*Documentation*	*01.12.2106*	*15.12.2106*

WBS 60	Update to existing documentation as a result of the REM Mobile Deployment activities.	*Documentation*	*01.12.2106*	*15.12.2106*

7.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

7.6 Exclusions

Not applicable.

7.7 General Assumptions

7.7.1 **Product Capabilities - IMS-CAP-062.09**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.2 **Product Capabilities - IMS-CAP-002 / Non-functional requirements - NFR-SEC-004**-The governance over access to Sydney Trains "intranet" is under control of Sydney Trains.

7.7.3 **Product Capabilities - IMS-CAP-017.02**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.4 **Product Capabilities - IMS-CAP-039.01**-The display of a heat map for over crowding on platforms and a traffic light for visually tracking is provided as layer in the legacy GIS system.

7.7.5 **Non-functional requirements - NFR-AUD-007**-The accessibility of backend environment is controlled by Sydney Trains and/or the System Integrator.

7.7.6 **Non-functional requirements - NFR-AV-004**-Clustered hardware hosting virtual machines and the licenses for those virtual machines are provided as CSI.

7.7.7 **Non-functional requirements - NFR-IO-003**-A email server will be provided as CSI, an outgoing email address will be supported.

7.7.8 **Non-functional requirements - NFR-IO-004**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.9 **Non-functional requirements - NFR-IO-006**-The Operating Systems clock will be synchronized with standard IT synchronising mechanisms such as e.g. NTP Clock. The maintenance the support and the licenses for such SW is assumed to be provided CSI.

7.7.10 **Non-functional requirements - NFR_PER_NEW**-It is assumed that geographical diversity refers to situations where mobile users or clients lose

connectivity with the system due to reception black sports or bandwidth shortage.

7.7.11 **Non-functional requirements - NFR-SEC-002**-It is assumed that the Active Directory environment is a customer supplied item.

7.7.12 **Non-functional requirements - NFR-SEC-010**-The Active Directory system will be provided and configured by Sydney Trains as CSI.

7.7.13 **Interfaces - IMS to BI**-The IMS database will be a Customer Furnished Item. The maintenance- and setup- task of such a shadow database will be part of the Sydney Trains internal IT department.

7.7.14 **Interfaces - IMS to Dashboard**-The assumption is that "Dashboard" refers to "OVDS" (Operational Video Display System).

7.7.15 **Interfaces - SMS**-It is assumed that the SMS provider is a customer furnished item.

7.7.16 **Interfaces – CTI IMS Options Paper - Comms**-It is assumed that the VCS system is a customer furnished item.

7.7.17 **Interfaces - Active Directory** -It is assumed that the Active Directory environment is a customer furnished item.

7.7.18 **Interfaces - Email** -It is assumed that the email system is a customer furnished item.

7.7.19 **Interfaces - Voice Mail**-Text to Speech Engine will be provided as Customer Furnished Item. Vocabulary and repository provided as Customer Furnished Item.

7.7.20 **Interfaces - GIS to IMS**-It is assumed that the locally installed Web-Bowers of the REM Incident manager working position supports the Silverlight Plugin which is required by the Small World application.

7.7.21 **PM Plan - Project Timeline**-The assumptions are based on a presumed start of the project implementation in May 2015.

7.7.22 **IMS Options Paper - User Interface**-Regarding NIN: The governance of Sydney Trains "intranet" is under control of Sydney Trains.

7.7.23 **IMS Options Paper - User Interface**-NIN messages received by REM are considered valid, truthful and trustful and will be passed on towards the IMS incident operator as NIN-Notification without further

7.7.24 **IMS Options Paper - User Interface**-The availability of speakers, headphones or other acoustic devices, used to reply the configured acoustic signals in appropriate quality is outside the responsibility of Frequentis.

7.7.25 **IMS Options Paper - Comms**-It is assumed that the SMS provider is a customer Supplied item.

7.7.26 **IMS Options Paper - Comms**-Frequentis REM offers integration with VCS systems which support ECMS232 for Computer Telephony Interface. We assume that EMCS232 will be supported by the incumbent unified communications layer within the ROC. Any alternative solutions will require additional customisation of the product

7.7.27 **IMS Options Paper - Comms**-Text to Speech Engine will be provided as Customer Supplied Item.

7.7.28 **IMS Options Paper - Comms**-Vocabulary and repository provided as Customer Supplied Item.

7.7.29 **IMS Options Paper - Comms**-It is assumed that the VoiceMail provider is a customer Supplied item.

7.7.30 **Implementation Strategy Stage 1**-The site and system environment for deploying the demonstrator system has to be provided by Sydney Trains or the System Integrator.

7.7.31 **Implementation Strategy Stage 1**-It assumed that email communication shall be supported and that an email server will be provided as Customer Furnished Item.

7.7.32 **Implementation Strategy Stage 2**-The raw data containing the information for building the foundation for the system's productive configuration is available and structured.

7.7.33 **Implementation Strategy Stage 2**-SMEs familiar with the data layout, it's meaning and purpose are available and support the data import process

7.7.34 **Implementation Strategy Stage 2**-It is assumed that email communication shall be supported and that an SMS provider is available. Limitations of SMS provider capabilities need to be considered (e.g. two way communication).

7.7.35 **Implementation Strategy Stage 2**-The connection and availability of a SMS provider is regarded a Customer Furnished Item.

7.7.36 **Implementation Strategy Stage 3**-A DTTS system which provides an interface for the IMS systems available.

7.7.37 **Implementation Strategy Stage 3**-A CIMS system which provides an interface for the IMS systems available.

7.7.38 **Implementation Strategy Stage 3**-The integration will be performed outside the productive environment.

7.7.39 **Implementation Strategy Stage 3**-A test environment able to host all three systems: REM, DTTS and CIMS is available and accessible.

7.7.40 **Implementation Strategy Stage 3**-DTTS and CIMS are configured in a way to allow testing of feasible and realistic use cases.

7.7.41 **Implementation Strategy Stage 3**-In case of missing systems to be integrated (DTTS or CIMS), simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.42 **Implementation Strategy Stage 4**-All legacy systems for integration with the IMS are configured and available.

7.7.43 **Implementation Strategy Stage 4**-In case of missing systems to be integrated, simulation devices are provided and accepted as valid verification methods regarding the REM functionality.

7.7.44 **Implementation Strategy Stage 4**-It assumed that CTI integration with the VCS shall be supported.

7.7.45 **Implementation Strategy Stage 4**-It is further assumed that the IMS will gain full access to a non productive VCS environment in order to test the integration.

7.7.46 **Implementation Strategy Stage 4**-It assumed that Voice Mail communication shall be supported and that a Voice Mail provider is available. Limitations of Voice Mail provider capabilities need to be considered (e.g. two way communication).

7.7.47 **Implementation Strategy Stage 4**-It is assumed that a speech engine for creation of Voice Mail messages is available.

7.7.48 **Implementation Strategy Stage 4**-The connection and availability of a Voice Mail provider and an appropriate speech engine is regarded a Customer Furnished Item.

7.7.49 **Licensing**-The capacity of the server installation is based on the following assumptions:

a) Up to 50 concurrent users of REM Incident Management Client;

b) Each operator is concurrently working on up to 5 incidents in parallel;

c) Up to 5 concurrent users of REM Data Management Client;

d) Up to 500 concurrent users accessing the REM Web Access Client;

e) Up to 50 concurrent users of REM Mobile Squad Leader App devices; and

f) Up to 80 concurrent users of REM Notification Sender App devices.

7.7.57 **Pricing**-License prices are based on the scoped amount. A discount has been applied given the number of licences specified. If this amount reduces, the discount will not apply.

7.7.58 **CSI**-All other CSI and responsibilities listed in the PIPP.

7.7.59 **Pricing** – Frequentis efforts have been calculated on the efforts agreed in the PIPP delivered in the High Level Solution Design Phase. If efforts are above and beyond the work originally scoped because of reasons including, but not limited to, contributions to new documents and/or other contractor's deliverables, a Contract Change Variation shall be raised.

7.7.60 **Pricing** – Transformational and Change Deliverables were not a part of the original Frequentis scope. The efforts and contribution to these activities needs to be analysed in conjunction with the System Integrator. The additional efforts will require a Contract Change Variation or additional payment arrangement.

7.7.61 **Scope** – The final definition of what feature is available in which release needs to be defined in the initial workshops.

7A. Implementation

7A.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the parties.

7A.2 Implementation strategy

7A.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

7A.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Deliverable No.9 in sections 5.4.

7B. Project Management

7B.1 Advice and knowledge transfer

Subject to the exclusions in section 7.6, the Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

7B.2 Contractor assistance

If requested, the Contractor must participate all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Initial Requirements, or if amended the Requirements, are accurate and complete; and

b) the Contractor's proposed solution.

7B.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

7B.4 Risk management

7B.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes Delivery Risks,

(**Issues Register**).

7B.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

7B.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 7B.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the Delivery Risks.

7B.4.4 The Contractor must report to the Customer:

a) Any issues or risks (including any Delivery Risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the Delivery Risks, immediately on becoming aware of that change in status.

7B.5 Cooperation with Other Contractors

7B.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Other Contractors in relation to the Project;

b) without assuming any liability for the contents of an Other Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Other Contractors;

c) comply with all other requests of the Other Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Other Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to an Other Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this clause by the Contractor is accurate and to the extent possible, complete.

7B.6 Communication with Other Contractors

7B.6.1 The Contractor must not, without the Customer's prior written consent:

a) give an Other Contractor a direction or instruction which will or is likely to vary the Other Contractor's scope in relation to the Project;

b) give an Other Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Other Contractor in relation to the Project;

c) give an Other Contractor a direction or instruction which will or is likely to delay the time that the Other Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Other Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Other Contractor in relation to the Services or the Deliverables.

7B.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and an Other Contractor, or between Other Contractors, in connection with the Project.

7B.7 Disputes between the Contractor and Other Contractors

7B.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with an Other Contractor by discussion and negotiation without the Customer's involvement.

7B.7.2 Where the Contractor has notified the Customer under section 7B.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

7B.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

7B.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

7B.8 Reliance on Other Contractors' work

The Customer does not warrant the accuracy or correctness of any unapproved reports, plans, drawings, documents or information provided by Other Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such unapproved reports, plans, drawings, documents or information.

7B.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

7B.10 Delivery Address

7B.10.1 The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

7B.10.2 The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

8. Customer Supplied Items (CSI) and Customer obligations

8.1 CSIs and obligations

8.1.1 Subject to section 8.2, the Contractor acknowledges that the Customer has provided the following CSI items to the Contractor prior to the Contract Date:

a) project scope (as documented in the architecture blueprint);

b) functional requirements (as provided in the RFP);

c) non-functional requirements (as provided in the RFP);

d) draft Implementation & Maintenance Phase PIPP

e) system security requirements;

f) data management strategy;

g) project concept and review;

h) architecture blueprint;

i) systems impacted (existing);

j) interface specifications (where available);

k) technical policies and standards;

l) draft Procure IT (the Customer Contract and this PIPP);

m) ROC organisation structure;

n) ROC program high level roadmap;

o) draft ROC program test management framework;

p) current processes;

q) concept of operations;

r) Transformation and Change Requirements v4.1;

s) ROC Systems Assurance and Planning Framework documents; and

t) ROC Data Architecture High-Level Strategy.

8.1.2 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

8.1.3 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 8.1.1(a) – (t), 8.1.2(a), 8.1.4 and 8.2.1.

8.1.4 The Customer shall provide the following CSI, for the period until the conclusion of WBS 60 is complete for the purpose of carrying out the activities described in this PIPP:

a) 1 x Hockey Licence;

b) 2 X Hockey Admin Users;

c) Up to 20 x ST iPhones;

d) Up to 20 x iPhone UID's; and

e) ST Test Environment Configuration Parameters.

8.2 CSI Facilities and Equipment

8.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data;

c) all system environments as defined in the document titled "Technical Environment Management Strategy version 9.0";

d) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required and validated data has to be provided in the format required by the Contractor; and

e) desktop equipment for the agreed number of Contractor Personnel working on Site,

8.3 CSI verification

8.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

8.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

8.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

9. Personnel

9.1.1 The Contractor must ensure that each member of the Contractor's Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

9.1.2 Any of the Contractor's Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

9.1.3 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

9.1.4 Nothing in Appendix B affects the scope of the obligations of either party as described in sections 4 and 5 of this PIPP.

10. Subcontractors

10.1 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the Detailed Design Phase workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

11. Approval by the Customer

11.1 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with clause 5 of the Additional Conditions and as per section 5.4 above.

11.2 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

12. Payment Plan

12.1 Contract Price

12.1.1 The Contract Price for the Contractor to complete Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase of the ROC program is [redacted] (ex GST).

12.1.2 The Contract Price has been calculated based on the milestones specified in the table below. A breakdown of the Contract Price is as follows:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation Phase and the Detailed Design (Release 1) Phase:			
The Services and Deliverables specified in sections 4 and 5 of this PIPP.	[redacted]	1	[redacted]
Sub-Total Project Preparation Phase and the Detailed Design (Release 1) Phase			
Initial Implementation (Release 1) Phase:			
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase (Release 1) Phase until the end of November.		1	
Travel Costs		1	
Customisation for ROC a) The majority of the customisation efforts can be deferred until 30 November 2015. b) Assumes that remaining customisation efforts will be ordered through the implementation contract until the		1	

deferred date.

License component			
The REM IMS.	[redacted]	1	[redacted]
Sub-Total Initial Implementation (Release 1) Phase			[redacted]
Initial Implementation (Release 1) Phase (CR1)			
Customisation for ROC			
Interface customisation including GAP Features	[redacted]		[redacted]
On/Off-Site Personnel Effort	[redacted]		[redacted]
1 December 2015 to 29 February 2016			
Travel Budget	[redacted]		[redacted]
Sub-Total Initial Implementation (Release 1) Phase (Continued)	[redacted]		[redacted]
CR2			
Licensed Software*	[redacted]		[redacted]
Customisation	[redacted]		[redacted]
Documentation Deliverables	[redacted]		[redacted]
System Administration	[redacted]		[redacted]
Sub-Total Initial Implementation			[redacted]

(Release 1) Phase (CR2)		
CR3		
Customisation of Licensed Software	[redacted]	[redacted]
On/Off-Site Personnel Effort for REM & REM Mobile 2016.R2 efforts.	[redacted]	[redacted]
Services and Deliverables for QR code functionality to support testing	[redacted]	[redacted]
Sub-Total CR3		[redacted]
	Sub-Total:	[redacted]
	Any Other Charges:	
	GST:	[redacted]
	Total Amount:	[redacted]

*The REM Mobile Software Licences , are only 40% of the full licence price for the respective module due to the reduced functionality required by the Customer for Release 1 only, as described in the DTBRS. Full mobile functionality will be required and be provided for under the Final Contract.

12.1.3 The Contractor is to be paid in accordance with the following milestones

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Detailed Design Deliverables funded as follows:			
	Project Preparation Phase and Detailed Design (Release 1) Phase			
1	Mobilisation payment of 50% (of	[redacted]	1	[redacted]

	[redacted]) of the Project Preparation Phase and Detailed Design Phase on or about the Effective Date			
2	25% (of [redacted]) on 15th September 2015	[redacted]	1	[redacted]
3	25% (of [redacted]) on 15th October 2015	[redacted]	1	[redacted]
	Initial Implementation Phase			
4	Mobilisation payment of 50% (of [redacted]) of the Initial Implementation Phase on execution of the Customer Contract.	[redacted]	1	[redacted]
5	25% (of [redacted]) on 31 January 2016	[redacted]	1	[redacted]
6	25% (of [redacted]) on delivery of Software specified in section 6.4 of this PIPP	[redacted]	1	[redacted]
	Initial Implementation Phase (CR1)			
7	Initial Payment due upon Customer execution of CR1	[redacted]	1	[redacted]
8	Progress Payment due	[redacted]	1	[redacted]

	on 31/01/2016			
9	Progress Payment of [redacted] due on 29/02/2016		1	[redacted]
10	Final Payment due upon delivery of the REM2016.R1 * [redacted]		1	[redacted]
	CR2			
11	Total CR 2 [redacted] upon execution of CR2		**100%**	[redacted]
	CR3			
12	Initial payment on execution of CR3		**30%**	[redacted]
13	Milestone payment 1 due on 31st July		**15%**	[redacted]
14	Milestone payment 2 due on 30th Sept		**20%**	[redacted]
15	Milestone payment due upon delivery of the REM 2016.R2 and REM mobile 2016.R2.		**20%**	[redacted]
16	Final Milestone Payment due on 15/12/2016		**15%**	[redacted]
		Sub-Total:		[redacted]
		Any Other Charges:		
		GST:		[redacted]
		Total Amount:		[redacted]

* The Deliverable for the purpose of this payment is receipt by the Customer of executable software on physical media. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

12.2 Payment

12.2.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 12.1.3.

12.2.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

12.2.3 The Contractor acknowledges and agrees that, as at the Commencement Date, the Customer has paid the Milestone 1 payment - Mobilisation payment of 50% (of [redacted]) of the Project Preparation Phase and Detailed Design (Release 1) Phase.

12.2.4 In the event that the Final Contract is not executed by 29 February 2016 as a result of any delay to the execution of the Final Contract solely attributable to the Customer, the Parties will negotiate, in good faith, stand-down and re-mobilisation costs.

12.2.5 In the event that the Customer does not enter into the Final Contract or terminates the Customer Contract for convenience, the Parties will negotiate, in good faith, the value of the balance of the cost of the Licensed Software which will be payable to the Contractor.

12.2.6 For the purposes of the Customer Contract, the Contract Price specified in section 12.1.3 is the Contract Value.

12.3 Termination for convenience

12.3.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with clause 15 of the Additional Conditions.

12.4 Liquidated Damages

12.4.1 Liquidated Damages will not be applicable for the Detailed Design (Release 1) Phase or Initial Implementation (Release 1) Phase.

13. Governance

13.1 Authorised Representatives

13.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Mark Pigot; and

b) the Contractor's Authorised Representative is Martin Rampl.

13.2 Management committee

13.3.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Mark Pigot;

b) Stefano Bianchini;

c) Bob Allum;

d) Imola Novak;

e) Martin Rampl;

f) Christian Dorner; and

g) Julian Molzer.

13.3.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

13.3 Management committee function

13.3.1 The function that the management committee is to:

h) review and monitor progress under the Customer Contract; and

i) carry out any other functions stated in Item 16 of the General Order Form.

13.4 Management committee meetings

The management committee must meet no less than once a week during the Project at the times and locations specified by the Customer.

13.5 Management committee progress report

13.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 13.4, provide the Customer with a weekly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

i. minutes and actions from the last meeting;

ii. risks and issues;

iii. details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Initial Requirements and Updated Requirements

Part 1: Initial Requirements

Frequentis Initial Requirements.pdf

Part 2: Updated Requirements

- Release 1 Functional Specification for REM Rel 2016.1 v3.0
- ROC Release 1 - IMS Architecture Specification v3.00
- ROC Release 1 - IMS Integration Specifications v3.0
- ROC Release 1 - IMS Product Gap Analysis v5 0
- ROC-TEC-SR-0001 V2.0 - Incident Management System R1 DTBRS
- ROC-TEC-SR-0001 V2.0 - Incident Management System R1 DTBRS_pdf
- SAD IMS v1.0 Published

[Note: Documents to be re-embedded, with the DTBRS document being replaced with v2.]

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
Detect				
IMS-CAP-001	The ability to integrate with various alarm sources, systems and technology to receive automated alerts. The type of automated alerts is to include but not be confined to: • Service delays received from DTTS, • Signal passed at danger, • Condition Monitoring, • Signal failure, • Points failure, • Overhead wiring failure, • Social media feeds, • Dwell time, • Section running time Lost, • Control system failure, • Technology failure, • Electrical failures / SCADA Network, • CCTV, • Alerts received from other incident management systems. Note: Please refer to NER for details on interfacing standards and technologies	**E**	Configuration	The product has a generic interface for creating incidents based on alerts raised from various upstream systems (e.g. asset monitoring, camera feed, incoming emergency calls, other incident management or condition monitoring systems). Incoming alerts are aggregated in a separate alert monitor view which allows users to create incidents or dismiss alerts.
IMS-CAP-002	The ability to create a network incident notice. Details to be captured for example are: • Issuers name, • Designation, • Contact details, • Relevant factual information, • Asset Information, • Weather (Forecast, actual, variance , actions).	**E**	Out of The Box	The product allows the generation of predefined reports and can export defined incident information to downstream systems as specified in IMS-CAP-044, IMS-CAP-045, IMS-CAP-046, IMS-CAP-047.
IMS-CAP-003	The ability to receive and input manual alerts. For example: • Phone call, • Text, • Email, • Web, • Mobile application. Phone calls are to be: • Recorded and entered into IMS, • Directed to the appropriate staff member. Note: All manually captured information is to be captured as structured data, this may involve prompts and human interaction.	**E**	Configuration	Users can create new incident records based on manual alerts received. Manually captured information can be filled out in the corresponding data fields, while unstructured data can be correlated to incidents as file attachments. REM supports integration with voice recording systems.
Record and Assess				
IMS-CAP-004	The ability to receive Network Incident Notices. For example: A network Incident Notice must be issued as soon as possible when an incident occurs on the rail network, and involves: • Actual or potential loss of life or injury, • Actual or potential damage to or defect in network infrastructure, • Damage to or defect in rail traffic, • Breach of Network Rules or Network Procedures.	**E**	Configuration	Network Incident Notices are treated and processed similarly to incoming alerts in the alert monitor view as specified in IMS-CAP-001, allowing the user to create an incident record based on the Network Incident Notice.
IMS-CAP-005	The ability for users to search and filter alarms. For example filter by: • Type of alarm, • Location of alarm, • Time and date of alarm.	**E**	Configuration	The alert monitor view allows users to filter alerts by type/source, location, time/date.
IMS-CAP-006	The ability to supress automatically created alarms. For example suppress automatically generated alarms, including but not limited to: • all persons/departments (e.g. false alarms), • by individual alarm instance, alarm type and/or department, • during shunting operations, • during manual proceed authorities (non-signalled movements).	**E**	Customisation	The suppression of alarms from alarm source types, e.g. CCTV, or specific sources e.g. a concrete CCTV camera can be configured. The suppression can be configured for a limited time interval. The display of alarms coming from certain alarm source types can be suppressed by the administrator for all users / roles.
IMS-CAP-007	The ability to manually create and update incident records. For example incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	The creation and management of incident records is one of the product's key capabilities. Incident records can follow a predefined template, or follow a configurable workflow consisting of configurable checklists and functional modules.
IMS-CAP-008	The ability to automatically create and update incident records based on predefined business rules. Incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	A newly raised incident is automatically provided with a unique identifier. A title can be suggested based on the incident category, location, Incident ID or other criteria. See IMS-CAP-007 for predefined and custom incident templates.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-009	The ability to automatically record incident details. The details and business rules required to automate the capture of incident details need to be configurable. For example details captured may include: • Users name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (Location of train, geographic location etc.), • Reporting system, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers), • Reference data, • Weather, • Events near by. Note: The details required will change based on the type of incident being recorded. It is envisaged that automatically created incident records will require some level of manual input to capture data elements which are not provided by other integrated systems.	**E**	Configuration	Incident details can be automatically filled or updated based on business rules, e.g. incident type, location and priority based on the alert source; weather data from an external service, affected services based on the incident location and impact etc.
IMS-CAP-010	The ability to manually record incident details. For example user may be prompted as to details required based on: • Users role (by either selecting from list or manually typing), • Type off Incident. Incident details may include: • Users Name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (can be location of train, geographic location etc.), • Reporter, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers) • Reference data • Weather, • Events near by. Note: The details required will change based on the type of incident.	**E**	Out of The Box	Incident details can be captured manually. The specific details are configurable for different incident templates. The product allows the recording of incident details as combo boxes or dropdown lists, radio buttons or checkboxes and text boxes.
IMS-CAP-011	The ability to correlate multiple incident records into a single incident record. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	Out of the box: The product allows the creation of a master incident record for aggregating separate incidents that are tied to or caused by the same event. Duplicate incident records can be cancelled without loss of lawful recording information. Customising: Rules for merging of incidents have to be elaborated together with the customer.
IMS-CAP-012	The ability to prompt users in the correlation incident records based on predefined business rules. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	It is possible to identify incidents that are potentially tied to or caused by the same event based on predefined business rules, such as correlating incident location and category for incidents within a certain configurable time frame.
IMS-CAP-013	The ability to receive a list of affected train services in real time from an external system and associate these with an incident. For example: • Receive a list of affected services associated with a single incident, • Impact the incident had on each service, • The number of passengers travelling on each service, • The time in which the service returned to planned stopping times.	**E**	Configuration	The affected train services can be acquired from the DTTS in real time and can be referenced to the IMS incident. REM out of the box contains an interface to Thales Aramis-D.
IMS-CAP-014	The ability to easily indicate the impact an incident is having on services either manually and / or automatically. For example users may be prompted / supported by the system to capture impact details. Impacts could be to: • Specific runs, • Runs on a line, • Runs passing through a stations, • Cross modal transport, • Stations. Types of impact will include: • Delays, • Cancellations, • Altered stopping patterns, • Change route, • Alternative transport.	**E**	Configuration	The impact of an incident on services can be determined in conjunction with interface data from the DTTS. Out of the box, REM contains an interface to Thales Aramis-D.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-015	The ability to retrieve asset information from an external system in real time. For example: • Sets, • Stations, • Lines, • Overhead wiring, • Signals, • Points, • Assets maintenance schedules (Over due, next planned etc.).	**E**	Customisation	Asset information can be retrieved from an external ERP solution (Ellipse, SAP).
IMS-CAP-016	The ability to view the availability of incident response personnel. For example: • View availability of staff already in operation, • View the availability of standby crew or response personnel, • View the capabilities of crew (i.e. trained to operate which set types), • View contact details, • View current location of staff in operation. Note: Requirement linked to IMS-CAP-026	**E**	Customisation	The product provides a checklist view which allows the assignment of action items to selected personnel. The user is prompted with a selection of incident response personnel, along with contact details, each flagged as available or unavailable. The crew capabilities can be stored as (an) additional attribute(-s) or linked documents. The response team has to acknowledge or deny the task assignment and report the completion of the task. The current location of response teams can be determined by devices allowing GPS tracking. Those devices are not part of the product. Using GPS tracking devices to localize personnel may lead to legal issues.
IMS-CAP-028	The ability to assign / action response team / personnel. For example: Provide assignee with visibility of: • Competence, • Availability of response teams, Provide response teams with: • Notification of action including all details required (fault type, location etc.), • Ability to accept / reject action, • Provide checklist of actions to address.	**E**	Customisation	The assignment of action items to response teams is described in the requirement IMS-CAP-016. Response teams can be provided with incident information and checklists containing action items using the product's Mobile Client. The Mobile Client allows the user to accept or reject actions. Furthermore, incident information can be distributed using the product's outbound communication channels as specified in IMS-CAP-025
IMS-CAP-017	The ability to identify the location of an incident on a geospatial view. For example: • Incidents location in relation to rail network assets, • Location based on the geospatial coordinates of the incident, • Street view, • Aerial view, • Terrains view, • Mark up map with location / notes, • Ability to geo reference, • Identify site / incident access points etc.	**E**	Out of The Box	The location of an incident can be identified and displayed in the integrated GIS View. Additional layers containing rail specific information (e.g. assets, access points, railway tracks and stations,..) or general information (street and terrain view) can be displayed in the GIS View. The integrated GIS view allows the user to automatically focus on the entered incident location.
IMS-CAP-018	The ability to manually add an estimated recovery time to an incident record. For example: • Estimated recovery times, • Estimated response times. Note: This estimate may be based on historic data or user knowledge.	**E**	Out of The Box	It is possible to set estimated response and recovery times for incident records.
IMS-CAP-019	The ability to automatically add an estimated recovery time to an incident based on configurable business rules. For example: • Estimated recovery times, • Estimated response times. Note: It is envisaged these automated estimations will be applied based on historic data.	**E**	Customisation	The product allows a basic configuration of business rules based on a defined number of incident details (e.g. type, weather condition) that automatically add an estimated response and recovery time for incident records.
Select / Define and Activate Response Plan				
IMS-CAP-021	The ability to initiate a workflow in response to creating an incident record. For example: • Initiate relevant workflow / response plans.	**E**	Out of The Box	The product allows the initiation of workflows based on defined business rules. For example, alerting of internal and external response teams, assigning tasks to response teams or an automated information of affected Rail Undertakings.
IMS-CAP-022	The ability to initiate manual predefined response plans. For example: • Provide plans to support Train Controllers or incident personnel in decision making. • Initiate alternate transport plans.	**E**	Out of The Box	Predefined response plans can be initiated as workflow-based checklists that allow the distribution of information to the involved parties.
IMS-CAP-023	The ability to create and initiate ad-hoc response plans. For example: • Create plans to respond effectively to rare / unusual incidents.	**E**	Out of The Box	Custom action items can be added to the checklist during the resolution of the incident. Each action item has a fixed set of attributes (Title, Description, Assignee, Timestamp/Range, Priority). Additionally, REM supports merging response plans for different types of incidents to cover rare and unusual incidents.

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-025	The ability to provide notification services to selected personnel For example: • Push based notifications, • Pull based notifications, • Subscription based notifications, • Push media update. Manage notification distribution lists and groups and business rules: • Create, • Read, • Update, • Delete, • Notifications to be distributes in near real time. Note: Notification may include notifying crew / operational staff of CAN warnings (Condition Affecting Network (i.e. Temporary Speed Restrictions) Notifications will also be distributed to management/ executives and other 3rd parties.	**E**	Out of The Box	Outgoing notifications can be manually or automatically sent to various channels, i.e. Short Message Service, email, Voicemail or as push/pull based notification. REM includes a configurable rule engine that determines who has to be informed about which incidents, and using which communication channel. Notification distribution lists can be configured.
IMS-CAP-026	The ability to track and display the location of all response teams / personnel: For example: • Location indicated on a map / geospatial display, • Roster information, i.e. the availability of team / personnel, • Current list of assigned actions assigned. Note: Requirement linked to IMS-CAP-016	**E**	Out of The Box	The integrated GIS View, automatically focusses on the incident location and displays the location of response teams associated data (assigned actions, roster information) in a dedicated layer.
IMS-CAP-027	The ability to view a current list of consumables that a teams / personnel are in possession of. For example: • Consumables required to fix / address a fault, • Tools required to fix / address a fault, • Vehicle type (specific vehicle type may be required to access a fault), • Historical analysis.	**E**	Customisation	The product is capable of displaying specific information (e.g. consumables, tools,…) about incident teams, retrieved from an external source system.
IMS-CAP-029	The ability for mobile personnel capture incident details when responding to a incident. For example: • Response teams capture and provide more details (via forms and checklists), • Reponses teams are able to view the latest details / information captured by other staff members.	**E**	Out of The Box	Response teams can be provided with a mobile client of the product that allows the capturing of incident details.
IMS-CAP-030	The ability to create predefined workflow / check lists for different types of incidents. For example different types of incident groupings will include: • Equipment, • Miscellaneous, • People, • Trains, • Weather Conditions. Note: Different types of incident will require involvement from different personnel and 3rd parties. Ability to: • Create, • Read, • Update, • Delete.	**E**	Out of The Box	Incident categories, workflows and checklists are configurable. Access rights for checklist items can be configured.
IMS-CAP-031	The ability to assign an incident actions manually and / or automatically. For example: Assign incident actions to a: • Business group / division, • Individual staff member. Assigning Incident records / actions to be: • Manual and / or, • Automated based on predefined criteria / metadata. Note: It is envisaged that workflow will have predefined actions and potential business groups / divisions responsible for them however this requirements allows for additional actions to be assigned.	**E**	Customisation	The product allows a rule based or manual assignment of incident actions to selected personnel. Incidents can be assigned to users or roles (corresponding to divisions). A filter functionality allows users to see incidents assigned to them.
IMS-CAP-032	The ability to manually override / skip workflows and checklists. For example authorised user able to depart: • Predefined Workflow, • Predefined Activity, • Predefine Checklist.	**E**	Out of The Box	The product allows workflows, activities and checklists to be skipped or processed in an arbitrary order unless mandatory for the completion of the workflow.
IMS-CAP-033	The ability to manually re-assign a workflow activity to a different individual or role. For example: • Initial assigned user unable to action task.	**E**	Out of The Box	The responsibility for the workflow activity can be changed to a different individual or role.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-034	The ability to distribute response plans to selected personnel electronically. For example via: • Web based application • Mobile application. **Note:** It is envisaged that distribution business rules would be managed as part of workflow.	**E**	Out of The Box	Response plans can be distributed to selected personnel by various communication channels or a web/mobile client.
IMS-CAP-035	The ability to provide a collaborative working environment in which multiple user will have the ability to simultaneously access and update incident details in real-time. For Example internal and external users provided with: • Visibility of incidents via multiple mechanisms: • Video, • Conferencing (calling and video), • Web, • Application based, • Notification, • Phone, • Mobile App, • Ability to provide input / suggestions. These would be managed through role based permissions. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan • Red indicates that required actions for the incident are not tracking to the response plan.	**E**	Out of The Box	The product allows multiple users to simultaneously access and update incident details. Incident information can be made available in the web and mobile client or distributed as outlined in IMS-CAP-025 (Short Message Service, email, Voicemail or as push/pull based notification). An incident overview allows users to track the progress of multiple incidents, allowing a graphical representation as traffic lights.
Track and Escalate				
IMS-CAP-038	The ability to record action(s) within an incident record. For example record action information such as: • Calling emergency services, • Calling operational staff, • Timestamps. The status of an action is monitored on its own and as part of the overall workflow, including but not limited to: • Overall status, • Time-forecast to complete, • Action completed, • Action authorisation (whom, when etc. where applicable), • Incidents and actions are tracked until completion, • Critical issues, • Constraints & Dependencies.	**E**	Out of The Box	Every single action for incident handling is logged and flagged with an automatic system timestamp, which cannot be overwritten. Additionally, the user can manually set a timestamp for specific events during incident handling (which is tracked separately). Otherwise, the timestamp is automatically filled with the current time. The tracked information allows the monitoring of the incident's status, action authorisation and completion as well as derived issues, constraints and dependencies.
IMS-CAP-039	The ability to provide visualisation capabilities to easily assess an incident and the status of its progress. For example: • On a rail schematic map, • On a geospatial map, • Affected service(s), • Related assets/equipment e.g. gates and assets, • Likely impact. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan, • Red indicates that required actions for the incident are not tracking to the response plan, • The ability to display a heat map to visualize or alert over crowding on platforms.	**E**	Customisation	The product allows for the integration of an existing GIS view. A web based GIS view can be integrated in a widget within the incident record detail view or in a separated application window. Given an interface that allows for raising a zoom to location action, the GIS view can automatically focus on the incident location provided by the user. There are various alternatives for integration, that need to be specified in detail in the ECI phase. The GIS View allows for the localisation of an incident, as well as related asset information (if provided by an ERP system as outlined in IMS-CAP-015). The impact on affected services can be determined in conjunction with the DTTS solution and visualised within the GIS view. The incident progress can be tracked as specified for requirement IMS-CAP-038. Overcrowding of a platform in form of heat maps can be visualized in the GIS view, requiring external data. Additionally, the product allows network drive integration to provide specific information (in the form of documents, spreadsheets or checklists) for the relevant railway installations.
IMS-CAP-040	The ability to track the progress / monitor incidents from creation until completion. For example: • Overall status, • Time-forecast to completion, • Action completed, • Action authorisation (who, when etc.), • Assignment information (assigner, assignee, time/date of assignment), • Updates made to the record (new comments, change to 'fields' such as the incident's category, priority etc.), • Internal communications distributed, • Customer Information distributed.	**E**	Out of The Box	All of the exemplary data (i.e. every single action taken within the incident record and interface communication) is fully logged and flagged with an automatic system timestamp.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-041	The ability to manually and / or automatically escalate a activity or task based on a pre-defined business rules. For example: Business rules are to be configurable. Automated escalation based on: • Time boxed activities, (an incident has not 'progressed' (no record update) for a specified timeframe) • Assignee not available. Manual escalation required where: • The incident itself has risen to the next severity level. • An incident has no response plan after a specified timeframe • Category, severity, priority.	**E**	Customisation	The product allows an automatic (rule-based) or manual escalation of incident action items to defined roles or personnel.
IMS-CAP-042	The ability to manually prioritise incident, actions and activities. For example: • Change priority due to severity.	**E**	Out of The Box	The incident's priority can be set in the corresponding data field.
IMS-CAP-043	The ability to filter views and create real-time and post event incident reports. For example: • All current ('open') Incidents, • All Incidents of a given status. Views of an incident can be customised as different staff (e.g. different profile, location, team etc.) will require different information. Ability to export report based data through a standard based interface.	**E**	Out of The Box	The incident list allows custom filters and sorting and can be exported as .csv/.xls.
IMS-CAP-067	The ability to adjust the boundaries which define the areas of responsibility for users. For example: • Train controller boundaries / sectors (Boards), • Response teams areas of responsibility.	**E**	Out of The Box	The product allows the definition of boundaries/areas of responsibility for different roles, based on time and incident location.
IMS-CAP-068	The ability for users to reserve a incident number in the system without having to provide incident details.	**E**	Out of The Box	An incident number can be reserved providing a minimum of mandatory fields specified by the customer.
Close and Report				
IMS-CAP-044	The ability to create electronic record (package) containing all incident record details and its associated / linked data files. For example: Details may include: • Origin of the Alarm / Incident (e.g. source system, user name), • Priority, • Time of alarm, • Incident ID, • Incident Level, • Cause, • Creator, • Impact on customers. • Time and Date. Other linked data may include: • CCTV, • Phone calls recorded, • Emails, • Text message, • PDF, • Photographs.	**E**	Configuration	The product allows the generation of predefined electronic records.
IMS-CAP-045	The ability to provide incident information to other downstream systems in real-time. For example: • Basic incident information, • Impact on services, • Expected restoration times. Note: Impact to trips, line and station would need to be received from DTTS.	**E**	Out of The Box	The product provides a default XML export functionality of incident details.
IMS-CAP-046	The ability to generate defined and ad hoc reports on incident status.	**E**	Out of The Box	The product can generate defined and ad hoc reports.
IMS-CAP-047	The ability to export safety related incident information in real time to an external system. Note: Refer to IMS architecture for interfacing systems.	**E**	Out of The Box	Incident data can be exported to external systems.
IMS-CAP-048	The ability to export incident details to a data warehouse.	**E**	Out of The Box	Incident data can be exported to a data warehouse solution.
IMS-CAP-050	The ability to manage business rules for closing incident records.	**E**	Out of The Box	Business rules for closing an incident can be defined (i.e.status-depenant mandatory fields or action items).
Other Capabilities				

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-051	The ability to create scheduled reports based on predefined criteria. For example: •Annually, Monthly, Weekly, Daily, Adhoc, • Date / Time, • Incident Reports, • OCR Reports, • NIN Reports, • CAN Reports, • AM Peak Composition Reports, • PM Peak Composition Reports, • AM Peak Summary Reports, • PM Peak Summary Reports, • Delayed Crew Reports, • NIN Report - Outstanding, • NIN Report - Date Raised, • Inactive User Reports, • Other reports such as: Ministerial reports, punctuality reports, sick passengers reports, airport line performance reports, maintenance incident reports etc.	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom reports. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required reports. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-052	The ability to manage (C,R,U,D) predefined reporting templates. Note: Business needs are constantly evolving therefore it is envisaged that report templates will need to be updated and new report types will need to be created.	**E**	3rd Party	JasperReports includes a report designer that allows the creation of custom reports.
IMS-CAP-053	The ability to manage (C,R,U,D) reference data. For example: • Import reference date, • Manage the different categories of incidents, • Manage Incident coding (used for attribution), • Asset information, • Stations, • Line, • Sectors, • Fleet types. Ability to: • Create (access / import) • Read, • Update, • Delete, • Export.	**E**	Out of The Box	The product is supplied with a separate Data Management Client which allows the management of reference data.
IMS-CAP-055	The ability to provide access to incident information to mobile / operational staff and 3rd parties external to the ROC. For example the ability to: • Provide real-time access to users and 3rd parties, • Received incident updates from a mobile device, • Ability to create incident notifications, • Provide a mobile collaborative work place, • Optimise data for mobile devices.	**E**	Out of The Box	The product is supplied with a mobile client which provides users with real-time incident information. The mobile client allows response teams to capture incident information or manage action items. The product allows the distribution of incident information via SMS, email and Voicemail.
IMS-CAP-056	The ability to manually and automatically link / attach relevant information to an incident record. For example the ability to link the following types of data to incident records: • CCTV & video footage, • Photographs, • Diagrams, • Pictures, • Phone call recordings, • Documents.	**E**	Out of The Box	Arbitrary attachments can be uploaded in a network drive and linked to the incident record. Links to relevant incident information can be captured in the incident details.
IMS-CAP-057	The ability to create, manage and maintain workflows, templates and checklists. For example: Workflows, Checklist, Templates we require the ability to: • Create, • Read, • Update, • Delete. Workflow capabilities to manage: • Business processes, • Activities (manual and automated), • Deadlines, • Check lists, • Business rules, • Notifications, • Escalations, • User roles, • User permissions, • Process monitoring, • Administration, • Auditing. Note: It's envisaged that some safety / network rules could be incorporated into the workflows either as pointer or guidance or actions.	**E**	Customisation	The product's design philosophy focusses on a time critical response and resolution of incidents. Workflows are represented by configurable checklists and functional modules which control manual and automated activities, notifications and escalations and allow the capturing of incident details. Checklists and functional modules are configurable components that allow the modelling of workflows. Checklists are ordered and displayed depending on incident categories, incident location and time. Business rules can be set for action items in the checklist, for example, to automatically notify users. The product allows an in-depth administration of user roles and permissions. It is possible to monitor the overall progress of multiple incidents in the list view, while details for single incidents can be accessed through the incident view. The product integrates an audit log, which fully traces all activities that have affected at any time a specific operation, procedure, or event (see IMS-CAP-038).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-058	The ability to manage alarm business rules: For example: • Manage Hierarchy of alarms, • Automated suppression rules, • Associated workflows rules, • Notification rules (Colour, frequency, visual, brightness, audio, volume), • Trigger CCTV views. Note: Requirement related to human factors.	**E**	Configuration	Alarm business rules can be managed in the Administration Client.
IMS-CAP-059	The ability to manage the roles and their associated permissions. For example: • Create, • Read, • Update, • Delete. • Roles (for example: Train Controller, Shift Manager), • Groups, (Train Control, Customer Information, Signalling etc.), • Permissions (ability to supress alarm, depart workflow, assign workflow). **Note**: The roles need to be in alignment with and in consideration of roles defined in other systems.	**E**	Out of The Box	Roles, Groups and Permissions can be managed in the Administration Client.
IMS-CAP-060	The ability to filter /search and select incident records for viewing. For example: • Origin (e.g. source system), • Priority, • Time of alarm, • Most recently acknowledged, • Incident ID, • Incident Level, • Cause, • Creator, • Time and Date.	**E**	Out of The Box	The incident list represents a view of all incidents. Those can be can be filtered, searched and sorted by different incident attributes, e.g. incident location, category, time/date, origin,…
IMS-CAP-061	The ability to view or instigate raising or closing of defect records for assets whose defect has caused a delay to services. For example: • View defect records for assets, • Instigate opening defect record for a specific asset / incident, • Instigate closing a defect record for a specific asset / incident. **Note:** Defects are managed in Fault Management Systems.	**E**	Customisation	The IFMS interface allows the viewing, raising or closing of defect records.
IMS-CAP-062	The ability to integrate and share real-time and post event incident information with other systems. For example systems such as: • Customer Information Management System, • Dynamic Timetabling System, • Operational Video Display System (OVDS), • Business Intelligence Systems, • Calculation Engine, • Fault Management Systems, • Safety Management Systems, • External 3rd Party Systems, • Other Incident Management Systems, • Other Computer Aided Dispatch Systems (i.e. ICEMS), • ERP systems, • Geospatial Information Systems (such as Small World), • State emergency services, • Wayside Information Management System (for alarms), • TMC Incident Management Systems, • Train Location Systems / On Time Running (TLS-OTR), • Billing systems . For example information exchange patterns such as: • Bi-directional request & respond, • Pull, • Push. • Receiving incident records from 3rd part incident management systems. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	Incident information can be sent in real-time or based on defined events (e.g. closing/completing an incident), over a variety of channels or services, as specified in IMS-CAP-025. Specific interfaces allow a deeper integration into up- and downstream systems, i.e. CIMS, DTTS, TLS-OTR, FPe, FMBS, CE, Reliance Rail, IFMS, SRS, ERP, GIS, a business intelligence solution, WIMS and 3rd party solutions. See Chapter 8 - "Interfaces" of the document "Understand Requirements_FRQ.pdf" for a detailled interface description.
IMS-CAP-063	The ability to integrate with a day of operation timetabling system. For example: • Receive alerts when services are experiencing delays, • Receive transposition details (i.e. add stop, skipped stop, terminate, cancel run etc.) • Receive lists of services affected, • Provide estimated restoration / recovery times • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the DTTS allows the interchange of incident and alert information (including affected services and estimated restoration and recovery times) and transportation details (SIRI SX, PT and ET).
IMS-CAP-064	The ability to integrate with a Customer Information Management System. For example: • Provide cause impact and advice details, • Provide estimate recovery times. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the CIMS allows the interchange of incident information and recovery times (SIRI SX).

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-065	The ability to integrate / display views on a large video display. For example: • Display dashboard type views, • Display GIS views, • Display location of response teams, • Display the location of a incident.	**E**	Out of The Box	It is possible to display the required information on a large video display. The product provides data for dashboard and GIS displays in real time and allows visualisation in a standard browser.
IMS-CAP-066	The ability to support the management of multiple incidents simultaneously. For example: • Different users working on different incidents, • Same users supporting different incidents.	**E**	Out of The Box	It is possible for different users to process different incidents. One user can open multiple incidents for processing at the same time. Multiple users can process a single incident at the same time. The product detects data conflicts and provides different mechanism for their resolution.
IMS-CAP-069	The ability for users to configure their own user preferences. For example: • Set up notifications of interest based on incident type, area of responsibility, • Set up method of notification, text, email etc., • Set up dashboard views. Note: Authorisation and Authentication is covered in the NFR's.	**E**	Out of The Box	Users can configure their personal notification rules and outbound channel in the client application. Personal dashboard views can be configured in the integrated 3rd party component as specified in IMS-CAP-079.
IMS-CAP-070	The ability to manually and automatically attribute further details to incident records. For example: • Who is responsible for root cause analysis, • Who the incident belongs to (Business unit, contract etc.), • Incident Delay Attribution (Late, very late, cancelled etc.), • Incident status (Open, Closed etc.), • Location of a incident, • Force majeure, • Attribution reporting, • Ability for attribution through mobile devices. Note: There are business rules (contractual timeframes) in which externals need to be informed of incident details.	**E**	Out of The Box	Further incident details can be manually or automatically (based on business rules) added to the incident description.
IMS-CAP-071	The ability to trigger viewing of specific CCTV cameras based on predefine alarms and business rules. For example: • Trigger CCTV cameras once a emergency help point has been activated (i.e. on set, on station, in lift etc.), • Trigger CCTV cameras on plats forms that are over crowded.	**E**	Out of The Box	The product is capable of catching alerts from CCTV cameras on predefined events and can display live and recorded video feeds.
IMS-CAP-072	The ability to assist users in managing / arranging alternative transport with 3rd party providers. For example: • Notification, • Booking, • Tracking progress (i.e. ETA), • Communicating with station staff. Note: This requirement is also covered under workflow requirements.	**D**	Out of The Box	3rd party providers for alternative transports can be tied to the product's responsibility model, allowing the user to access booking information or communication with station staff over various outbound channels, based on the incident location. Progress tracking can be assisted with a specific checklist.
IMS-CAP-073	The ability to provide users with visibility of pre-planned special events / track work. For example: • Easter show, • Carols in the domain, • Track work - daily summary reports, • Road, bus, ferry and light rail.	**E**	Configuration	The Administration Client allows the configuration of special events in advance. The User Client can display a list of upcoming events.
IMS-CAP-074	The ability to provide users with access to images, photos and documents to aid in the communication of incident details. For example: • GIS imagery, • Access to reference data, • Ability to edit imagery and distribute updates.	**E**	Configuration	The User Client allows the upload of unstructured data to a network drive folder for the specific incident (see IMS-CAP-056). It is possible to send incident details and file attachments to designated users or user groups. The GIS View provides the user with a toolset for drawing objects into the GIS view and publishing updates to other users.
IMS-CAP-076	The ability to manage (C,R,U,D) meta data for records within the system. For example: • Create, • Read, • Update, • Delete. Meta data examples: Location, Creator, Alarm Type etc.	**E**	Customisation	It is possible to manage meta data for incident records.
IMS-CAP-078	The ability to assist / prompt users to help in the diagnosis of the root cause of a incident / defect.	**E**	Out of The Box	The product aids the user in diagnosing the root cause of the incident. For example by: - checklist-based gathering and display of incident information - detailed information from interfaces to other incident management systems - correlating data from upstream or integrated systems (e.g. relevant assets, incident location details, weather information..) - display of alarm sources

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-079	The ability to manage (C,R,U,D) dashboard views that will be available to users. For example: • Create, • Read, • Update, • Delete. • Flexible filtering and data visualisation, • Shared views, • Views including GIS, • Views including internal and external incident information	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom dashboard views. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required dashboard views. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-080	The ability to provide users with the ability to access and view dashboards For example: • Access given to those who are within ROC, • Access provided via mobile device. • Information on a dashboard is real-time, • Tables, graphs, hot spots, GIS views etc.	**E**	3rd Party	The recommended 3rd party tool (see IMS-CAP-079) provides a browser based dashboard view which allows users to access and view dashboards on a broad range of devices, e.g. large video displays or mobile devices. The product provides those dashboards with real-time data.
IMS-CAP-081	The ability to view a incidents sequence of events in time order in either real-time or post incident. For example: • Real-time replay to help identify what actions have been activated, • Post event replay to learn and improve process and procedure	**E**	Customisation	The product's audit log enables a full reconstruction of the incident sequence. It is possible to provide a replay functionality for displaying the actions taken in the incident resolution.
IMS-CAP-082	The ability to manage (C,R,U,D) a contact management details. For example: • Telephone, email, mobile, address, • Provide access contact details for internal and external 3rd parties, • List of on call response staff. **Note:** This may require integration with existing legacy systems.	**E**	Out of The Box	The product's Administration Client allows management of contact details. The User Client can display corresponding response staff and allows the distribution of contact details.
IMS-CAP-083	The ability to simulate how a incident recovery may unfold. For example: • Based on actions assigned, • Based on historical information (provide improved estimated response / recovery times), • Based on feedback received from end users.	**I**	Customisation	It is possible to implement a rule set that allows a simulation of the actual incident resolution based on incident details (estimated response and recovery times and assigned actions).
IMS-CAP-084	The ability to view and monitor resource constraints. For example: • Monitor availability of resources, • Monitor shift start and end times, • Access competence levels. Note: This will be useful information prior to dispatching the relevant resources to assist in the recovery of a incident.	**E**	Out of The Box	The product is capable of displaying available response teams as outlined in IMS-CAP-028. Shift start and end times as well as competency levels of resources can be managed in the Administration Client
IMS-CAP-085	The ability for the system to dynamically learn and improve processes based on historic data. For example: • Ability to change activities based on timeframes, • Ability to suggest alterations to predefined support plans due to identified bottle necks.	**I**	Future	
IMS-CAP-086	The ability to capture incidents for existing incident management systems. i.e. Act as the single point in which all incident records are created. Note: It is envisaged that IMS will become the single point in which incident records are created. After which IMS will pass the incident records down to the existing incident management systems. For example: • IFMS, • SRS, • FMS.	**E**	Customisation	The product will integrate with the existing incident management systems for cross referencing incidents, sharing incident information or raising and closing incidents.

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
Accessibility			
NFR-ACC-001	The component/(s) shall be accessible via standards based browser environment or thin client, for example: • Remote Desktop Protocol (RDP) • Citrix	**E**	Out of the Box
NFR-ACC-002	The component/(s) shall be accessible remotely to 3rd parties, based on business rules and appropriate permission, for example: • Transport Management Centre • New South Wales Police Force	**I**	Out of the Box
NFR-ACC-003	The solution shall enable the dynamic reconfiguration of workstations to meet operational demand, interacting with the necessary infrastructure and telecoms systems to enable communications and control authorisation to move with a workstation.	**E**	Out of the Box
Auditability			
NFR-AUD-001	The solution shall provide the ability to tailor audit requirements by component. The audit logs shall contain at least the following security relevant information: • identification and authentication of users • date and time that the event occurred and was recorded • source system, device or application, e.g. IP address, application, or assigned name • type of action, for example include authorise, create, read, update, delete and accept network connection • before and after values when action involves updating a data element • any status, response or errors values generated as a result of the event or activity.	**E**	Out of the Box
NFR-AUD-002	The solution shall provide the ability to tailor audit requirements by component. The events to be recorded in activity and/or audit logs need to include but not necessarily be limited to: • start up and the stopping or shutdown of: o applications and databases o operating systems, including servers o infrastructure components such as firewalls, routers and switches • connection initiation, establishment and termination, including: o source and destination address o desired or requested service • information received from external interfaces as well as information dispatched to other systems • errors that occur in any infrastructure, operating system or application component • successful activities initiated by all individuals, whether authorised or not • changes to production systems and applications • relevant application and/or process/thread activity • creation, modifying, deleting and disabling or revoking of user permissions and access • records created by security systems such as anti-virus/malware tools, IDS/IPS (Intrusion Detection Systems / Intrusion Prevent Systems), firewalls and access/identity management tools	**E**	3rd Party
NFR-AUD-003	The solution shall ensure audit logs are stored and maintained in accordance with the relevant security classification level assigned to the log information, in an un-editable format based on date and/or other recorded audit details to be specified.	**E**	Out of the Box
NFR-AUD-004	The solution shall ensure the audit logs shall be stored in a device separate to the device or application that created the logs. This is to: • minimise the potential for deliberate corruption or unauthorised deletion of logs • permit the use of shared logging infrastructure, including integrity mechanisms, minimising cost overheads and chronologically synchronising logs • improve the ease of correlating events across applications, systems and infrastructure.	**E**	Out of the Box
NFR-AUD-005	The solution shall be designed and implemented to minimise the recording of sensitive or personal identifying information in logs and audit trails unless such detail is necessary for specific business or operational reasons.	**E**	Out of the Box
NFR-AUD-006	The solution shall provide functionality to interrogate audit logs and raise alerts on critical and suspicious activity.	**E**	Out of the Box
NFR-AUD-007	The solution shall provide the ability to restrict access to audit logs, to system and appropriately trusted application administration and support staff.	**E**	Out of the Box
NFR-AUD-008	The solution shall provide Auditors direct access to the audit system to view audit logs and/or the ability to export to a reporting engine.	**E**	Out of the Box
NFR-AUD-009	The solution shall record all access of audit logs. These log records in turn require protection as per NFR-AUD-003 to NFR-AUD-008	**E**	Out of the Box
NFR-AUD-010	The solution shall ensure logging facilities and log information are protected against tampering.	**E**	Out of the Box
NFR-AUD-011	The solution shall support variable retention policies for audit logs, dependent upon Sydney Trains Log Retention Policy "ICT-SGD-70107 Logging".	**E**	Out of the Box
Availability			
NFR-AV-003	The component/(s) shall ensure that the installation of patches / hot fixes etc do not require the system to be taken down or reboot.	**E**	Configuration
NFR-AV-004	The component/(s) shall seamlessly operate across multiple physical data centres.	**E**	Out of the Box
Interoperability			
NFR-IO-001	The component/(s) shall support the following transport data interchange standards: - GTF/GTFS-R - SIRI (v1.3 +)	**E**	Customisation
NFR-IO-002	The component/(s) shall support the extraction of data based on ETL standards.	**E**	Out of the Box
NFR-IO-003	The component/(s) shall support interfacing with email systems supporting SMTP.	**E**	Out of the Box
NFR-IO-004	The component/(s) shall be compatible with common desktop browsers, for example: • Internet Explorer (*note: v8.0 is currently deployed within Sydney Trains*) • Safari • Chrome • Firefox	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-IO-005	The component/(s) shall be compatible with common mobile browsers, for example: • iPhone/iPad • Android • Blackberry	**E**	Out of the Box
NFR-IO-006	The component/(s) clock shall be synchronised with the definitive master clock.	**E**	Out of the Box
Maintainability			
NFR-MNT-001	The component/(s) shall support Sydney Trains backup rotation requirements without the need to restrict end user access.	**E**	Out of the Box
NFR-MNT-004	The Disaster Recovery system shall ensure all audit logs are backed up on a regular basis.	**E**	Out of the Box
NFR-MNT-009	The component/(s) shall provide an automatic way of migrating the data of existing database in case of data structure change during transfer to new versions.	**E**	Out of the Box
NFR-MNT-010	The component/(s) shall provide the ability to revert to a previous release.	**E**	Out of the Box
NFR-MNT-011	The component/(s) shall ensure support activities can be completed remotely to reduce operational interruption.	**E**	Out of the Box
NFR-MNT-012	Maintenance task / service activities must be able to be completed without operational interruption.	**E**	Out of the Box
Manageability			
NFR-MGN-001	The component/(s) shall support systems management standards such as SNMP.	**E**	Out of the Box
NFR-MGN-002	Critical errors (e.g. back up failure) that occur within the component/(s) shall provide warning message to the system administrator (e.g. via SMS, email). These alarms must raise an incident within the Sydney Trains Incident Management System.	**E**	Out of the Box
Performance			
NFR-PER-001	The component/(s) shall provide a response time for all functions (e.g. application loading, screen open and refresh times) below 2 seconds under peak loads. All components should have a fit for purpose response time.	**E**	Out of the Box
NFR-PER-002	The component/(s) shall have the ability to not impact system performance while auditing and monitoring of usage.	**E**	Out of the Box
Portability			
NFR-PO-001	In the event of a requirement to apply a patch/upgrade, the component/(s) shall automatically port any customisation authorised by the application supplier.	**E**	Out of the Box
NFR-PO-002	The component/(s) shall support ease of migration to new technology (hardware or software) as and when it becomes available to the market.	**E**	Out of the Box
Reliability			
NFR-REL-001	The component/(s) shall provide the ability to retain all electronic files, at least until confirmation of a successful exchange / transfer process. This is a procedural safeguard, to ensure that records are not deleted before successful exchange / transfer is reported from the recipient.	**E**	Out of the Box
Reporting			
NFR-RPT-001	The component/(s) shall support standards based printers, formats, page sizes, for example: • A0 for zigzags.	**E**	Out of the Box
Scalability			
NFR-SCA-001	The component/(s) shall support simplicity of scaling options both horizontally and vertically, for example add more users to a node, add more nodes.	**E**	Out of the Box
Security			
NFR-SEC-001	The component/(s) shall support integration with Sydney Trains' Identity and Access Management component/(s) (Oracle) to perform authentication. Sydney Trains authentication process uses Single Sign On / Same Sign On standard (e.g. provide single sign on access to component/(s) once a user is logged on to the Sydney Trains network (via a Sydney Trains computer or a VPN). Content classified as 'Protected' will require the user to provide their user name and password to access it.	**E**	Configuration
NFR-SEC-002	The component/(s) shall support LDAP authentication.	**E**	Out of the Box
NFR-SEC-003	The component/(s) shall support that USER_ID's are only used to identify and reference users and not as proof of identity or authentication mechanism.	**E**	Out of the Box
NFR-SEC-004	The component/(s) shall support access control checks, if a web application, to access protected URL, must not be bypassable by a user that simply skips over the page with the security check.	**E**	Out of the Box
NFR-SEC-005	The component/(s) shall ensure, if a web application, administrator access through the front door of the site is not possible.	**E**	Out of the Box
NFR-SEC-006	The component/(s) shall provide the ability to apply a Segregation of Duties (SoD) matrix for roles and responsibilities, which is easily updated via an administrator user interface. This may include • access levels (role based, field level, category/content) • password requirements - length, special characters, expiry, recycling policies • inactivity timeouts – durations, actions • re-authentication after timeout.	**E**	Out of the Box
NFR-SEC-007	The component/(s) shall provide the ability to provide risk and SoD analysis at user, role, transaction, and authorisation object field value levels.	**I**	Customisation
NFR-SEC-008	The component/(s) shall provide the ability to simulate user role changes, in order to identify hidden risks at the user level, before the introduction of a user change.	**I**	Customisation
NFR-SEC-009	The component/(s) shall provide the ability to enable automation of identification of SoD conflicts at each user level, together with the ability to generate and distribute reports detailing SoD conflicts and mark those that have an approved exception.	**I**	Customisation
NFR-SEC-010	The component/(s) shall support a "change password" function, whereby users are required to provide both their old and new password when changing their password.	**E**	Out of the Box
NFR-SEC-011	The component/(s) shall ensure, if a web application, authentication and session data is not submitted as part of a GET, POST should always be used instead.	**E**	Out of the Box
NFR-SEC-012	The component/(s) shall provide the ability to automatically notify designated security administrators of unauthorized access or attempted access and record in a log with reporting.	**E**	Out of the Box
NFR-SEC-013	The component/(s) shall not indicate whether it was the username or password that was wrong if a login attempt fails.	**E**	Out of the Box
NFR-SEC-014	The component/(s) shall inform users, if a web application, of the date/time of their last successful login and the number of failed access attempts to their account since that time.	**E**	Out of the Box
NFR-SEC-015	The component/(s) shall ensure, if a web application, authentication pages are marked with all varieties of the no cache tag to prevent someone from using the back button in a user's browser to back up to the login page and resubmit the previously typed in credentials. Many browsers now support the "autocomplete=false" flag to prevent storing of credentials in autocomplete caches.	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-SEC-016	Remote access to the ROC components by third party users including Service Providers (e.g. remote system managers, developers. technical support etc.) can only be done by: • Corporate Virtual Private Network (F5-Firepass).	**E**	Out of the Box
NFR-SEC-017	The servers running ROC systems should be isolated on a separate network segments in order to prevent attackers from using them as a platform for mounting attacks on systems in other segments and vice versa.	**E**	Out of the Box
Usability			
NFR-USE-001	The component/(s) shall be designed to minimise cognitive load. Use of configurable audible alarms and visual stimulus must be designed to entice an appropriate response and to differentiate between critical and non-critical events (to be determined by business rules).	**E**	Out of the Box
NFR-USE-002	The component/(s) shall ensure alerts are distinctive, sufficiently loud (at least 5dB(A) above ambient noise level), of an appropriate frequency range (between 500Hz to 3000Hz) and shall not disturb or be confused with other operators alerts.	**E**	Out of the Box
NFR-USE-003	The component/(s) shall provide the ability to change character size, font, contrast and colour of displays to: • allow for the use of more or larger monitors • maximise viewing distance • reduce focal convergence for operators (related to eye strain) • reduce the impact on the operator of heat from monitors.	**E**	Configuration
NFR-USE-004	The component/(s) shall provide the ability for Administrators to perform configuration tasks without customisation and vendor support. These tasks may include: • maintain all value lists • maintain all field labels • maintain data filters • maintain workflows • maintain reports • hide/show and reorder columns • add data filters.	**E**	Configuration
NFR-USE-005	The component/(s) shall provide the ability for Administrations to add more fields to the data input screens for capturing additional business specific information without having to write any code. These fields shall be configured without creating additional tables or without the additional effort of referencing the new fields to the existing fields on the screen. The user shall also be able to define the data type and the data length of the additional fields without having to write any code.	**I**	Configuration
NFR-USE-006	The component/(s) shall have unified, easy, flexible and user friendly interface enabling, for example, the following settings: • personal user menu • personal user settings • field placement on screen • field composition on screen.	**E**	Customisation
NFR-USE-007	The component/(s) shall support multiple screen sizes and resolutions. Minimum display resolution shall be 1280x1024 pixels (design aim of 1600x1200).	**E**	Out of the Box
NFR-USE-008	The component/(s) shall not reduce workspace area if Branding were applied to that component.	**E**	Out of the Box
NFR-USE-009	The component/(s) shall provide online help which is contextual and target the Sydney Trains users.	**I**	Out of the Box
NFR-USE-010	The component/(s) shall ensure all user interfaces have an Australian locale, for example dates displayed in Australian format dd/mm/yyyy, dictionaries Australian, etc.	**E**	Out of the Box
NFR-USE-011	The component/(s) shall be consistent with common interface conventions and best practices, for example: • support minimal keystrokes/typing (e.g. provide reference data via drop down list opposed to free text fields) • quick, simple and user friendly	**E**	Out of the Box
NFR-USE-012	The component/(s) shall perform all functions with keyboard support (mouse is not mandatory).	**D**	Out of the Box
NFR-USE-013	All component/(s) shall be homogenous with respect to keyboard use, screen layout and menu operations with Graphic User Interface (GUI) support.	**D**	Out of the Box
NFR-USE-014	The component/(s) shall have facility to display confirmation / warning windows, for example deletes, changes.	**E**	Out of the Box
NFR-USE-015	The component/(s) shall be able to gracefully handle any feasible set of inputs, any errors that can be generated by internal components such as system calls, database queries, or any other internal functions. For example: • when errors occur, the site should respond with a specifically designed result that is helpful to the user without revealing unnecessary internal details • error messages must be produced in meaningful, plain English, and logged so that their cause can be reviewed.	**E**	Out of the Box
NFR-USE-016	The component/(s) shall include progress indicators while performing functions greater than 2 seconds.	**E**	Out of the Box

Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Maria Schwarzenauer	Project Manager	a) Overall successful performance of the project within schedule and budget; b) Overall project management activities (planning, organising, controlling); c) Participation and action item processing for Project Management related topics with the Customer and System Integrator; d) Production of Weekly Status Reports, including the Project Highlight Reports; e) Attending Management Committee Meetings; f) Managing the Contractor team on-site/off-site; g) Managing Change Requests; h) Risk management – DRICA; i) Facilitating cooperation with the Other Contractors; j) Management and execution of all Project related communication between the System Integrator, CNS and the Contractor (including alignment meetings and technical clarification)
Bjoern Brunner	Solution Architect	a) Participation and action item processing in workshops with the Customer and System Integrator; b) Solution design; c) Architectural consultancy; d) Master Data mapping support; e) Support of integration and integration validation.
Armin Steinwandter & Peter Hauk	Solution Consultant	a) Solution Consultance Support (Solution Consultant) ; b) Participation and action item processing in workshops with the Customer and System Integrator; c) Product & Solution consultancy; d) Data provisioning support; e) Data management and configuration support

Bjoern Brunner	Requirements. & Test Manager	a) Co-ordination of all requirements, engineering and test activities for the Project; b) Preparation of all Acceptance Test activities.
Reinhard Sollböck	Project Manager CNS	c) CNS project management activities (including planning, organising and controlling) d) Management and execution of all Project related communication within CNS (including technical alignment meetings and technical clarification)
Robert Devide	Requirements Manager off-site	Requirements engineering for REM2016.R1development off-site
Monika Blassnig	Quality Manager	Quality assurance of the Project Deliverables as well as ensuring that the Configuration Management guidelines are known and met by the Project team.
Bruce Evans	System Engineer	a) Support of System Integrator's system administration activities for Demo, Dev, SAT, SIT, UAT, Training environments until handover to the Customer; b) Master Data Import / Export (on-site).
Monika Bassnig	Configuration Manager	Identification, direction and co-ordination of the Configuration Management activities.
Alexander Bruckner	Product SW Lead	Software configuration and development in response to the requirement specifications
Neha Rodey	Test Engineer	Support Test Manager (creating, performing test cases, test documentation)
Bruce Evans	System Engineer	System Installation / Integration
Alistair McGill	Account Manager	Responsible for customer relationship management
Martin Rampl	Commercial Manager	In charge of negotiating the contract and all modifications thereto on the part of the contractor
Swdorny Veliyath	Technical Trainer	Preparation and provision of system administrator and application administrator training.

Thomas Karl	Internal Project Sponsor Frequentis	Accountable for the overall Project success towards the Contractor's executive board and participant of the ROC steering committee.
Reinhard Sollböck	Internal Project Sponsor CNS	Accountable for the success of the CNS project share towards the Contractor's executive board.

2 Customer roles and responsibilities

Name	Role	Responsibility
Mark Pigot	Technology Team Manager	Management of the Technology Team
Stefano Bianchini	Lead Architect	Oversight of Technical Design for ROC Program
Bob Allum	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Imola Novak	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
As required	Sydney Trains Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

Phases to deliverables	Baseline End Date
1. Updated High Level Solution Design	16th October 2015
2. Release 1 Architecture Specification	27th October 2015
3. Release 1 Functional Specification	27th October 2015
4. Release 1 Non-Functional Design	27th October 2015
5. Release 1 Integration Specification	27th October 2015
6. Project Communication Plan for Release 1	4th September 2015
7. Release 1 Data Management Plan	11th September 2015
8. Release 1 Data Technical Analysis Outputs	27th October 2015
9. Updated Technology Implementation Strategy	22nd September 2015
10. Release 1 Technology Implementation Plan (Template)	1st October 2015
11. Technology Test Strategy	11th September 2015
12. Updated Project Management Plan	14th September 2015
13. RACI	28th August 2015
14. Agreed Final Contract	25th September 2015
15. Detailed implementation & Maintenance Phase PIPP	24th September 2015
16. [Not used]	
17. Updated Release 1 Product Gap Analysis	28th October 2015
18. Release 1 System Test Plan	15th October 2015
19. Requirement's Traceability Matrix for Release 1	15th October 2015
20. Technology Environment Management Strategy	18th September 2015
21. Operating Model	29th September 2015
22. Draft recommended ROC Organisational Structure	30th September 2015
23. Change Impact Analysis (Release 1)	9th October 2015
24. Release 1 Training Needs Analysis	23rd October 2015

25. REM System Software Delivery Stage 2016.R1	30 April 2016
26. REM 2016 R1 including REM Mobile 2016.R1.	31 May 2016
27. [Not used]	
28. Test Documentation*	31 May 2016
29. Interface Documentation*	31 May 2016
30. Data Model Documentation*	31 May 2016
31. System Administration Training Material*	31 May 2016
32. User Manuals*	31 May 2016
33. Updated Implementation Strategy	31 Aug2016
34. Updated Architecture Specification	31 Aug2016
35. Updated Functional Specification	31 Aug2016
36. Updated Integration Functional Specification	31 Aug2016
37. Updated Release 1 Data Technical Analysis Outputs	31 Aug2016
38. Updated Data Management Plan	31 Aug2016
39. Updated Project Management Plan	31 Aug 2016
40. Release 1 Technology Implementation Plan	24 June 2016
41. Test Procedure Book (REM Mobile 2016.R1)*	15 May 2016
42. Test Objective Matrix for SAT (REM Mobile 2016.R1)	15 May 2016
43. Functional Specification (REM Mobile 2016.R1)*	22 April 2016
44. GAP Analysis (REM Mobile 2016.R1)*	21 March 2016
45. User manual (REM Mobile 2016.R1)*	31 May 2016

*Note: It is anticipated that these Deliverables are likely to be completed under the terms of the Final Contract.

46. REM System/Software Delivery (REM Release 2016.R2)	31 Oct 2016
47. REM System/Software Delivery (REM Mobile 2016.R2)	31 Oct 2016
48. Gap Analysis (REM Release 2016.R2)	30 Aug 2016
49. Gap Analysis (REM Mobile 2016.R2)	30 Aug 2016

50. Functional Specification (REM Release 2016.R2)	15 Aug 2016
51. Functional Specification (REM Mobile 2016.R2)	15 Aug 2016
52. Test Summary Report for System Test (REM Release 2016.R2)	15 Nov 2016
53. Test Summary Report for System Test (REM Mobile 2016.R2)	15 Nov 2016
54. Update of Interface Documentation	15 Dec 2016
55. Update of Data Model documentation	15 Dec 2016
56. Update of User Manuals	15 Dec 2016
57. Requirements Traceability Matrix for REM 2016.R2	30 Aug 2016
58 . REM Mobile Software Update (2016.R1)	15/08/2016
59. Configuration Process Documentation	15/12/2016
60. Deployment Process Documentation	15/12/2016
61. Hand-over to support Documentation (handover of non-production processes & procedures)	01/12/2016
62. Update to existing documentation as a result of the REM Mobile Deployment activities.	01/12/2016

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

The overall risk management process to be applied can be summarised in the figure below.

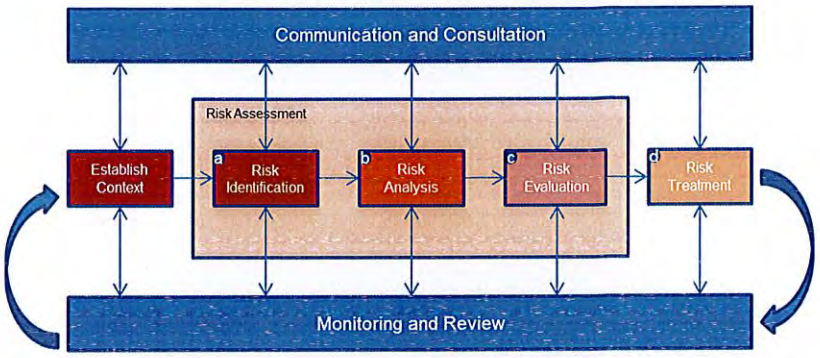

Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

Appendix E - Acceptance Form.do

AJILON MILESTONE ACCEPTANCE

CLIENT NAME :	**Sydney Trains**
CONTRACT :	
PROJECT :	

Milestone Details

The following Milestones have been met under the above project:

Milestone/ Deliverable	Evidence	Date Provided/Met

The above Milestones/ Deliverables have been provided/ met :

Signature _____

Project Director _____

Date _____

On Behalf Of Ajilon Consulting Pty Ltd

Signature _____

Program Manager _____

Date _____

On Behalf Of Sydney Trains

[Ajilon Commercial use]		
Description	**Amount**	**Comments/Reference**
Client Purchase Order Value	$	
Value of Previous Claims	$	
Value of this Claim	$	Payable to Ajilon
Total Value this Claim	**$**	Payable by Sydney Trains
Balance Outstanding	$	

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The "doer" creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one "A" can be assigned to an action. Also known as the "Owner" of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. "In the Loop"
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. "Keep in the Picture"

Phase	Document Name	Contractor	System Integrator	Customer
Detailed Design (System Integrator and Contractor) Release 1				
	Updated High Level Solution Design	R	A,R	C
	Release 1 Architecture Specification	R	A	C
	Release 1 Functional Specification	R	AR	C
	Release 1 Non-Functional Design	R	AR	C
	Release 1 Integration Specification	R	A,R	C
	Project Communication Plan for Release 1	C	A,R	C
	Operating Model	R	A	C
	Change Impact Analysis (Release 1)	R	A,R	C

Phase	Document Name	Contractor	System Integrator	Customer
	Release 1 Training Needs Analysis	R	A,R	C
	Draft recommended ROC Organisational Structure	R	A,R	R
	Release 1 Product Gap Analysis	R	A	I
	Release 1 Data Management Plan	R	A	C
	Release 1 Data Technical Analysis Outputs	R	A	R
	Updated Implementation Strategy	R	A	C
	Release 1 Technology Implementation Plan (Template)	R	A	C
	Technology Test Strategy	R	A	C
	Updated Project Management Plan	R	A,R	C
	RACI	C	A,R	C
	Agreed Final Contract	I	A	R
	Detailed Implementation & Maintenance Phase PIPP	I	A	R
	Release 1 System Test Plan	A	R	C
	Requirements Traceability Matrix updated for Release 1	R	A,R	C
	Technology Environment Management Strategy	R	A,R	C
Initial Implementation (Release 1) Phase (Contractor & Other Contractor)				
	REM System Software Delivery Stage 2016.R1			
	REM 2016 R1 Licensed Software including REM Mobile 2016.R1.	A,R	C	C
	Test Documentation *	A,R	C	C
	Interface documentation*	A,R	C	C
	Data model documentation*	A,R	C	C
	System Administration Training material*	A,R	C	C

Phase	Document Name	Contractor	System Integrator	Customer
	User manuals*	A,R	C	C
	Updated Implementation Strategy	C	A,R	C
	Updated Architecture Specification	R	A,R	C
	Updated Functional Specification	R	A,R	C
	Updated Integration Specification	R	A,R	C
	Updated Release 1 Data Technical Analysis Outputs	C	A,R	C
	Updated Data Management Plan	R	A,R	C
	Updated Project Management Plan	C	A,R	C
	Release 1 Technology Implementation Plan	R	A,R	C
	Test Procedure Book (REM Mobile 2016.R1)	A,R	C	C
	Test Objective Matrix for SAT (REM Mobile 2016.R1)	A,R	C	C
	Functional Specification (REM Mobile 2016.R1)*	A,R	C	C
	GAP Analysis (REM Mobile 2016.R1)*	A,R	C	C
	User manual (REM Mobile 2016.R1)*	A,R	C	C

* Denotes Deliverables expected to be delivered by the Contractor to the Customer under the Final Contract.

The following deliverables have been added by Change Request Number 3.

	REM System/Software Delivery (REM Release 2016.R2)	A,R	C	C
	REM System/Software Delivery (REM Mobile 2016.R2)	A,R	C	C
	Gap Analysis (REM Release 2016.R2)	A,R	C	C
	Gap Analysis (REM Mobile	A,R	C	C

	2016.R2)			
	Functional Specification (REM Release 2016.R2)	A,R	C	C
	Functional Specification (REM Mobile 2016.R2)	A,R	C	C
	Test Summary Report for System Test (REM Release 2016.R2)	A,R	C	C
	Test Summary Report for System Test (REM Mobile 2016.R2)	A,R	C	C
	REM Mobile Software Update (2016.R1)	A,R	I	I
	Configuration Process Documentation	AR	I	C
	Deployment Process Documentation	AR	I	C
	Hand-over to support Documentation (handover of non-production processes & procedures)	AR	I	C
	Update to existing documentation as a result of the REM Mobile Deployment activities.	AR	I	C

Appendix G – Acceptance Criteria

Approval Criteria for Project Preparation Phase

The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

Approval Criteria for Detailed Design (Release 1) Phase

Standard List of Approval Criteria

The Approval Criteria for the following Deliverables of Detailed Design (Release 1) Phase are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase;

b) where the Deliverable is a document, that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (section 5.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design (Release 1) Phase, following the completion of the initial Customer/ Contractor workshops.

Approval Criteria for the Initial Implementation (Release 1) Phase

The Approval Criteria for the following Deliverables of Initial Implementation (Release 1) Phase are as follows:

a) where the Deliverable is a document, that all sections of the document are complete;

b) the Deliverable meets the criteria listed in the Deliverables section (section 6.4 of the PIPP), where stated;

c) if applicable to a document, the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

d) there are no outstanding major defects from the review of the deliverable; and

e) where the Deliverable is REM 2016.R1, receipt by the Customer of REM 2016.R1 on physical media shall occur at delivery of the executable software on physical media to the Customer. Acceptance of REM 2016.R1 will be undertaken during the testing phases of the Final Contract.

1. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number	4
Date of Change Request	30th of November 2016
Originator of need for Change Request	Customer
Proposed Implementation Date of Change	1 March 2016
Date of expiry of validity of Change Request	Not Applicable
Contractor's estimated time and cost of evaluation	Not Applicable
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**	Nil

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**

DETAILS OF CHANGE REQUEST

Summary

1. The Customer is establishing a new Rail Operations Centre (ROC).

2. The Customer wishes to procure the design, installation, testing and implementation of new technologies at the Site which will replace the current rail operation technology and provide enhanced capability to improve key 'day of operations' processes (**the Project**).

3. An ECI Contract was entered into by the Parties in relation to the Project on 24 December 2014. The output of the ECI Contract was a High Level Solution Design and BAFO. That ECI Contract was separate to this Customer Contract.

4. On 15 October 2015 this Customer Contract was entered into by the Parties as the 'Detailed Design Contract'. The Detailed Design Contract refined the technical scope of the IMS that was developed in the ECI Contract.

5. Change Request 1 to this Customer Contract was executed on or about 25 February 2015 to provide additional funding for Release 1 Detailed Design and additional funding for Release 1 implementation work.

6. Change Request 2 to this Customer Contract was executed on or about July 2016 to add in REM Mobile functionality and system administration services.

7. Change Request 3 to this Customer Contract provided for REM Mobile deployment services and REM 2016.2 development and delivery incorporating Customer requirements.

8. Since 1 March 2016 the Contractor has been performing work in relation to the Project that was outside the scope of the PIPP under this Customer Contract.

9. This Change Request will amend the Customer Contract (including the PIPP) so that:

   (a) the Letter Agreement dated 12 August 2016 (the **Letter Agreement**) and the Letter of Intent dated 30 September 2016 (the **Letter of Intent**) are terminated and of no further effect;

   (b) all payments made under the Letter Agreement and the Letter of Intent are deemed to have been made under the Customer Contract;

   (c) all work paid for or performed under the Letter Agreement and the Letter of Intent are deemed to have been performed under this Customer Contract; and

   (d) the scope of work under the PIPP has been expanded to include all work described in the attached PIPP, which includes all work from Detailed Design of Release 1 through to testing and implementation of Release 1.

10. This Customer Contract when it was originally agreed for Detailed Design contemplated that a separate "Final Contract" would be negotiated and agreed to cover implementation work. The Parties have agreed instead to expand the scope of this Customer Contract to cover implementation, rather than enter into a separate contract. As a result, this Customer Contract now constitutes the Final Contract for purposes of Release 1.

11. The Parties further acknowledge that:

   (a) the Services and Deliverables produced or provided under this Customer Contract will be required for Release 3;

   (b) Release 3 is not a part of this PIPP at this time; and

   (c) support and maintenance services are not a part of this PIPP at this time (although they have been baselined by the Parties).

12. The Parties intend that:

   (a) this Change Request takes effect so that the Customer Contract is varied with effect from the "Proposed Implementation Date of Change" specified on the cover of this Change Request;

   (b) the Customer Contract as amended by this Change Request continues in full force and effect;

   (c) all rights and liabilities of the Parties under this Customer Contract prior to the "Proposed Implementation Date of Change" are as set out in this Customer Contract as it existed prior to the date of this Change Request;

   (d) nothing discharges, prejudices, releases or otherwise affects any liability, obligation or accrued right arising under the Customer Contract prior to the "Proposed Implementation Date of Change"; and

   (e) this Change Request is intended only to vary the Customer Contract and not to terminate, discharge, rescind or replace it.

13. The documents attached to this Change Request show the Customer Contract as it exists after this Change Request is implemented. Subject to paragraph 14, the marking up shows

14. The Parties acknowledge that the PIPP attached to the Change Request may not be a fully consolidated PIPP, and that some content from previously performed activities may be missing. The parties have proposed creating a consolidated PIPP following execution of this Change Request including all activities that were set out in:

    (a) The PIPP as attached to the original Customer Contract;

    (b) The PIPP attached to Change Request 1;

    (c) The PIPP attached to Change Request 2;

    (d) The PIPP attached to Change Request 3; and

    (e) The PIPP included in Attachment 1 to this Change Request.

    If a consolidated PIPP is not agreed, then the Parties acknowledge that their obligations under this Customer Contract at any point in time are as set out in the PIPP attached to the Customer Contract at that point in time.

SCOPE

The scope of this CR4 includes adding to the Customer Contract all testing and implementation work for Release 1.

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

The effects of CR4 are as shown in markup in the contract documents contained in Attachment 1 to this Change Request.

EFFECT OF CHANGE ON PROJECT TIMETABLE

No Change. The amendments detailed in this Change Request are necessary to accord with the existing Project Schedule.

New PIPP (annexed)

The current PIPP is replaced in its entirety as set out in Attachment 1 to this Change Request. As noted above, that PIPP may not include a complete restatement of all Deliverables from the date of execution of the Customer Contract. A consolidated PIPP will be prepared promptly following signing of this Change Request.

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

The effect of CR4 is to increase the value of this Customer Contract to [redacted] (including GST) or [redacted] (excluding GST).

Please refer to Section 21 of the updated PIPP in Attachment 1 for a full break down of the relevant Prices.

CHANGES TO CSI

No change.

CHANGES TO CUSTOMER PERSONNEL

No change.

CHANGES TO CUSTOMER ASSISTANCE

No change.

PLAN FOR IMPLEMENTING THE CHANGE

Not applicable.

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Contractor

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Customer

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

None.

EFFECT ON USERS OF THE SYSTEM/SOLUTION

None.

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Additional documentation will be supplied as detailed in the updated PIPP set out in Attachment 1 to this Change Request.

EFFECT ON TRAINING

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

None.

ASSUMPTIONS

None.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

The following documents contained in Attachment 1 and Attachment 2 (or Attachment 3 for a clean version) form part of this Change Request (in addition to this Change Request Form):

(a) the revised General Order Form;
(b) the revised Module 3 Order Form;
(c) the revised Module 7 Order Form;
(d) the Module 8 Order Form;
(e) the Module 9 Order Form;
(f) the revised Additional Conditions; and
(g) the revised PIPP.

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

The Customer Contract is amended as set out in the documents set out in Attachment 1 and Attachment 2 to this Change Request. The amendments are shown in markup. A clean copy of the Customer Contract is also attached in Attachment 3.

AUTHORISATION

Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability

Signature of Customer Representative

Mike Bonanno

Print name

30th November 2016

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

MARTIN RAMPL

Print name

30th Nov 2016

Date

BB

Schedule 1: General Order Form

CUSTOMER

Item 1 Name of Customer

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Customer's full legal name:	Sydney Trains (ABN 38 284 779 682)

Item 2 Service Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Customer's service/delivery address:	Level 13, 477 Pitt Street, Sydney NSW 2000

Item 3 Customer's Representative

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Representatives (clause 23.1)	
Specify an employee who is the Customer's Authorised Representative:	Mark Pigot

CONTRACTOR

Item 4 Name of Contractor

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Contractor's full legal name:	Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Item 5 Service Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Contractor's service/delivery address:	1 / 425 Nudgee Road, QLD, 4011

Item 6 Contractor's Representative

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Representatives (clause 23.1)	
Specify an employee who is the Contractor's Authorised Representative:	Martin Rampl

Item 7 Head Agreement

This Item 7 must be completed when the Customer Contract is entered into under a Head Agreement.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.1)	
Specify the Head Agreement number:	Not applicable.
Specify the Head Agreement title:	Not applicable.
Specify the Term of the Head Agreement: Start Date: End Date: If the Term of the Head Agreement has expired the Customer must obtain the Contract Authority's approval to enter into a further Customer Contract, and this approval should be attached to this General Order Form.	Not applicable.
Insurance (clause 16.2)	Not applicable.
Specify the insurances required under the Head Agreement:	Not applicable.
The default insurance requirement under the Head Agreement is public liability insurance with an indemnity of at least $10,000,000 in respect of each claim for the period of cover. Specify any higher limit of cover that is required by the Head Agreement:	Not applicable.
The default insurance requirement under the Head Agreement is product liability insurance with an indemnity of at least $10,000,000 for the total aggregate liability for all claims for the period of cover. Specify any higher limit that is required by the Head Agreement:	Not applicable.
Specify if professional indemnity/errors and omissions insurance was required under the Head Agreement. If so, the default insurance requirement is for a limit of cover of $1,000,000 in respect of the total aggregate liability for all claims for the period of cover. Specify any higher limit that is required by the Head Agreement:	Not applicable.
Workers' compensation insurance in accordance with applicable legislation:	Not applicable.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify any other type of insurance required under the Head Agreement and the specified amount:	Not applicable.
Performance Guarantee (clause 17.1)	Not applicable.
Specify if the Contractor was required to provide a Performance Guarantee under the Head Agreement:	Not applicable.

Item 8 Modules that form part of the Customer Contract

Formation (clause 3.8(a))

Indicate, by marking with an X, the Modules that apply

Module 1 – Hardware Acquisition and Installation	☐	Module 11 – Telecommunications Services	☐
Module 2 – Hardware Maintenance and Support Services	☐	Module 12 – Managed Services	☐
Module 3 – Licensed Software	☒	Module 13 – Systems Integration	☐
Module 4 – Development Services	☐	Module 14 –Hosting Services	☐
Module 5 – Software Support Services	☐	Module 15 Satellite Services	☐
Module 6 – Contractor Services	☐		☐
Module 7 – Professional Services	☒		☐
Module 8 – Training Services	☒		☐
Module 9 – Data Migration	☒		☐
Module 10 – X as a Service	☐		

Item 9 Schedules that form part of the Customer Contract in addition to the General Order Form

Formation (clause 3.8(b))

Indicate, by marking with an X, the Schedules that apply

Schedule 1 – General Order Form	Applies	Schedule 7 – Statutory Declaration – Subcontractor	☒
Schedule 2 – Agreement Documents	☒	Schedule 8 – Deed of Confidentiality	☒
Schedule 3 – Service Level Agreement	☒	Schedule 9 – Performance Guarantee	☒
Schedule 4 – Variation Procedures	☒	Schedule 10 – Financial Security	☒
Schedule 5 – Escrow Agreement	☒	Schedule 11 – Dispute Resolution Procedures	☒
Schedule 6 – Deed Poll – Approved Agents	☐	Schedule 12 – Project Implementation and Payment Plan	☒

Item 10 Contract Period

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contract Period (Clause 2.4)	
Specify the Commencement Date if it is not the date when the Customer and the Contractor sign the Customer Contract:	7 August 2015
Specify the end of the Contract Period:	The Contract Period will commence on the Commencement Date and end on the date on which the Contractor has discharged all of its obligations under this Customer Contract. Subject to the Customer paying the full licence fee for the Licensed Software, the Licence for the Licensed Software is perpetual.
Specify any period of extension of the Contract Period in days/weeks/years:	Not applicable.

Item 11 Common Details

Formation (clause 3.4)			
Product and/or Service	**Price per Unit**	**Quantity**	**Extended Price**
As described in the PIPP set out in Annexure B to the Customer Contract, as updated or varied by the Parties from time to time (**PIPP**).	As specified in the PIPP.	As specified in the PIPP.	As specified in the PIPP.
		Sub-Total:	As specified in the PIPP.
		Delivery Charges:	As specified in the PIPP.
		Any Other Charges:	As specified in the PIPP.
		GST:	As specified in the PIPP.
This is the Contract Price (plus GST)		**Total Amount:**	As specified in the PIPP.

Item 12 Delivery Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Delivery (clause 5.1)	
Specify the address of the Site where delivery is to be made:	As specified in the PIPP.
Specify any delivery instructions:	As specified in the PIPP.
Specify the hours during which delivery may be made to the Site:	As specified in the PIPP.

Item 13 Contract Specifications

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
If the Contract Specifications are the User Documentation leave this Item blank. If the Contract Specifications comprise other documents, list those documents in order of priority:	The Contract Specifications consist of: a) the Requirements as defined in the PIPP; b) the Deliverables set out in the PIPP; c) any requirements for the Deliverables set out in the Additional Conditions specified in Annexure A to this Customer Contract (**Additional Conditions**); d) any documents included and / or referenced in Schedule 2 – Agreement Documents; e) any other requirement or specification agreed between the Parties in writing; and f) any documents incorporated by reference, or referred to, in any of the documents detailed above.

Item 14 Payment

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Payment (clauses 11.1 and 11.2)	
Invoicing (clause 11.7 and 11.9)	
Specify the Customer's officer to receive invoices:	Faroon Reddy
Specify address to which invoices should be sent:	Level 13, 477 Pitt Street, Sydney NSW 2000.
Specify the number of days from receipt of a Correctly Rendered Invoice that the Customer must make payment. If this Item is not completed, the Customer must pay the Contractor within 30 days from receipt of a Correctly Rendered Invoice.	The default period of 30 days unless otherwise specified in the PIPP.
Specify when the Contract Price must be paid: E.g. if the earlier Price is to be paid on delivery, insert "The Contract Price is due on delivery". If payment is to be made on more than one occasion then consider using a PIPP under Item 20.	As specified in the PIPP.
Specify whether the Contract Price is fixed: E.g. does the unit Price per item vary for inflation or other factors? If so, specify the calculation for Price variations:	The Contract Price is fixed.

Item 15 User Documentation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
User Documentation (clause 5.4(b))	
Specify the Price of any additional copies of the User Documentation:	Nil.

Item 16 Management Committee

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Management Committee (clause 6.4)	
List the name/s of the Contractor's project manager, officers or other relevant persons who will sit on the management committee:	The Contractor's representatives are as specified in the PIPP.
Management Committee (clause 6.6)	
Specify the function to be performed by the management committee:	In addition to the functions specified in clause 6.6 of Part 2 of the Customer Contract, the additional functions of the management committee and the times at which the management committee must meet, are specified in the PIPP.
List the name/s of the Customer's project manager, officers or other relevant persons who will sit on the management committee:	The Customer's representatives are as specified in the PIPP.
Management Committee (clause 6.8)	
Specify the details, including the contents of the progress report to be submitted to the Customer's project manager:	As specified in the PIPP.
Specify any other details:	As specified in the PIPP.

Item 17 Performance Review Procedures

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Performance Reviews (clause 6.10)	
Specify if a service and performance review/s of the Contractor's performance of the Customer Contract is to apply:	No.
Specify any specific time intervals for service and performance reviews:	Not applicable.

Item 18 Site Preparation and Maintenance

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Site Specifications (clause 6.12)	
Specify if a Site Specification is required:	No. A Site Specification is not required.
Access to Customer's Site (clause 7.1(b))	
Specify any other requirements in relation to the Site access:	None.
Specify any requirements for the preparation and maintenance of the Site:	None.

Item 19 Implementation Planning Study

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Implementation Planning Study (clause 6.14)	
Specify if the Contractor must provide an implementation planning study:	No. An Implementation Planning Study is not required.
Specify the implementation planning study objectives and time for provision of study:	Not applicable.
Date for delivery of the implementation planning study to the Customer:	Not applicable.
Specify if the implementation planning study need to undergo Acceptance Tests in accordance with clause 10.1(b):	Not applicable.

Item 20 Project Implementation and Payment Plan (PIPP) and Staged Implementation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Project Schedule (clause 6.17)	
Invoicing (clause 11.7)	
Specify if a PIPP has been created. If so, identify the document in this Item and attach as an Annex to this General Order Form: E.g. the PIPP is in a document "PIPP v1_1 27/10/11" and Annexure 1 to the Customer Contract.	Yes. The PIPP is set out in Annexure B to the Customer Contract.
Staged Implementation (clause 6.20)	
Specify if there is to be Staged Implementation: If so, details of the Deliverables that comprise each Stage must be stated in the PIPP together with the period during which the Customer must give written notice to move to the next Stage (if greater than 10 Business Days):	The Contractor is to undertake the Project in the Stages set out in the PIPP. For the avoidance of doubt, a "Stage" is defined as a "Phase" in the PIPP.

Item 21 Liquidated Damages

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Liquidated Damages (clause 6.28 to 6.34)	
Specify if Liquidated Damages (LDs) will apply:	Liquidated Damages will apply.
Specify the Milestones which are LD Obligations:	The following Milestones will be LD Obligations: a) Release 1 Go Live scheduled for 10 December 2016 or a date in March 2017 to be notified to the Contractor in writing should the Customer decide to delay Release 1 Go Live. b) Such other Milestones as may be agreed in the PIPP as LD Obligations

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify the Due Date for completion of each LD Obligation:	As detailed above
Specify the calculation and amount of LDs for each LD obligation:	For the Release 1 Go Live, Liquidated Damages of [redacted] per day will apply. For the Release 3 Go Live, Liquidated Damages of [redacted] per day will apply. For other LD Obligations, the Liquidated Damages will be as set out in the PIPP.
Specify the maximum number of days LDs are to be paid for each LD obligation:	For the Release 1 Go Live, the maximum number of days Liquidated Damages are to be paid for each LD Obligation is 45 days subject to a cap of [redacted] representing 10% of the portion of the Contract Price that relates to the implementation activities. For the purposes of determining the Contract Price for Liquidated Damages for the Release 1 Go Live, the following calculation was used: Detailed Design price: [redacted] plus Implementation charges of [redacted] **Total:** [redacted] Less, Detailed Design charges of a. Original BAFO charge: [redacted] b. Extension of personnel effort: [redacted] c. Personnel Efforts until 29 February 2016 [redacted] **Deducted Total:** [redacted] **Portion of Contract Price that attracts LDs for the Release 1 Go Live:** [redacted] The Liquidated Damages payable in respect of Release 3 Go Live will be capped at 10% of the portion of the total Contract Price that relates to Release 3 and the maximum number of days will be the number of days it takes to reach this cap.

Item 22 Customer Supplied Items (CSI) and Customer Assistance

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Customer Supplied Items (CSI) (clause 6.36)	
Specify each CSI to be provided by the Customer: CSI may be: office access, desks etc (specify location, standards, times of access); Hardware or software (specify equipment, capacity, versions of software and dates of availability); VPN access or other remote access (specify capacity and hours available). [Note: details of any Customer Personnel	As specified in the PIPP.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
should be specified in Item 26].	
Specify if any CSI must be covered by support and maintenance contracts including the period of cover, the Contractors rights of access to any third party support help desk, the hours and service levels to which support and maintenance must be available to the Contractor:	No.
Specify the times when each CSI is to be provided:	As specified in the PIPP.
Specify any requirements to attach to any CSI: E.g. any standards that the CSI must meet.	Not applicable.
Specify if the Contractor must conduct any verification checks of CSI's to ensure they are satisfactory:	As specified in the PIPP.
If so, specify the verification check process for each CSI: Include: • a process to manage satisfactory and unsatisfactory verification checks; • a process to manage 'reissued' CSI's: • a process to manage repeat CSI verification checks: • a process to manage 'draft' or 'incomplete' and 'updated' CSI's; • a process to manage rejected CSI's: • a process to manage previously satisfactory CSI which becomes defective: • a list of required verification check forms and/or registers and a corresponding data entry process: • a list of Customer and Contractor nominee/s for responsibility to undertake verification checks:	As specified in the PIPP
Specify any amount payable by the Contractor to the Customer for any item of CSI:	Nil.
Customer Assistance (clause 6.41)	
Specify the instructions, information, data, documents, specifications, plans, drawings and other materials that must be provided by the Customer to the Contractor:	As specified in the PIPP.

Item 23 Escrow

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Escrow (clause 6.42)	
Specify if an escrow arrangement is required:	Yes. An escrow arrangement is required in the form of Schedule 5 and will reflect the principles set out below.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
	The Parties have agreed that: (a) subject to the exception in paragraph (b) below, the Contractor must include the following material in escrow for each item of software that is a Deliverable (including any modification or customisation of that Deliverable) (each a **Software Deliverable**): (1) the object code or Java Byte code of that Software Deliverable; (2) all source code; (3) documentation that would enable a competent programmer to understand the program logic of that Software Deliverable and keep that Software Deliverable in good order or repair, such as relevant programmer notes, plans, drawings; (4) a copy of all tools (excluding 3rd Party Software as detailed in point (c)) and libraries required to recompile the source code of that Software Deliverable and full written details of the development environment to allow the Customer (or a competent contractor) to replicate that Software Deliverable; (5) any code and build tools necessary for the Customer (or a competent Contractor) to rebuild the complete Software Deliverable; (b) the Contractor must include a list of all Third Party Software (including the applicable software vendor) in escrow; and (c) the Contractor must update the Escrow Material to ensure it is up date to reflect any New Release supplied to the Customer. The initial deposit will be for REM 2016.R2 and REM Mobile 2016.R2 (unless the parties rollback to REM 2016.R1 and REM Mobile 2016.R1 in accordance with the PIPP). Further deposits will be made as required under this Customer Contract.
Specify the parties to the escrow arrangement:	Escrow agent: Assurex Escrow Pty Ltd (ABN 64 008 611 578) Frequentis Australasia Pty Ltd (ABN 25 107 550 489) as Contractor Frequentis AG (ATU14715600). Sydney Trains (ABN 38 284 779 682) as Principal
Specify the time for the escrow arrangement to endure:	The Escrow Agreement must be formally established within 1 week, or any other such time as may be agreed between the Parties, of the date of execution of Change Request 4. The term of the Escrow Agreement is from the date of signing until the date that is 12 months following expiry of this Customer Contract.

Item 24 Business Contingency Plan

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Business Contingency (clause 6.45)	
Specify if a Business Contingency Plan is required:	Yes

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify when the Business Contingency Plan is required:	The Contractor provided the Business Contingency Plan to the Customer prior to the Commencement Date. The Contractor shall provide an updated Business Contingency Plan as requested by the Customer.
Specify any information to be included in the Business Contingency Plan including the business contingency services required and the period of the services:	Not applicable. No additional information is required
Specify the periods that the Business Contingency Plan must be reviewed, updated by the Contractor:	The Contractor shall certify currency of the Business Contingency Plan on an annual basis.
Specify the time periods that the Contractor is to test the operability of the Business Contingency Plan:	The Contractor shall test the Business Contingency Plan annually or any other such time that may be agreed between the Parties.

Item 25 Secrecy and Security

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Access to Customer's Site (clause 7.4)	
Specify any secrecy or security requirements that the Contractor and its Personnel must comply with: E.g. insert a reference to any document that includes a security requirement.	The Contractor must comply with, and must ensure that each of the Contractor's Personnel comply with: (a) the Customer's confidentiality and system security policy and procedures and execute a deed of confidentiality in a form acceptable to the Customer; (b) the Customer's Code of Conduct; (c) the Customer's IT policy and procedures; (d) all other reasonable requirements specified by the Customer.

Item 26 Customer's Personnel

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Personnel General (clause 8.5)	
Specify the Customer's Personnel who will be available to work with the Contractor and their roles and responsibilities: Also specify the times and duration of their involvement as well as their authority levels:	As specified in the PIPP.

Item 27 Specified Personnel

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specified Personnel (clause 8.8)	
Specify the identity and roles and responsibilities of any of the Contractor's Specified Personnel:	Details of the Contractor's Specified Personnel are specified in the PIPP.

Item 28 Subcontractors

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Agents and Subcontractors (clause 8.17)	
Specify which subcontractors are required to provide a Statutory Declaration by Subcontractor, substantially in the form of Schedule 7:	The Contractor must obtain a statutory declaration for the Subcontractor where required by the Customer or otherwise where that statutory declaration is a condition of the Customer's approval of a subcontract under clause 8.14.

Item 29 Quality Standard Accreditation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contractor Warranties (clause 9.1(h))	
Specify any quality standard accreditation arrangements the Contractor must hold during the Contract Period:	The Contactor must maintain accreditation that it is compliant with the following standards: (a) Quality Management System Guideline 2006; (b) AS/NZS ISO 9001:2008 standard or an approved equivalent standard as applicable to the Deliverables; and (c) any other standards specified in the PIPP or any of the Customer's policies or procedures that the Contractor is required to comply with (see item 30). If the Customer requires additional accreditations which are not specified in this Item 29 and that additional accreditation would cause the Contractor to incur material additional costs, the Contactor may raise a Change Request to address such additional costs.

Item 30 Contractor's Compliance with Standards, Codes and Laws

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contractor Warranties (clause 9.1(g))	
Specify any laws (other than Statutory Requirements) the Contractor is to comply with:	Any statute, regulation, by-law, ordinance or subordinate legislation in force from time to time in any jurisdiction other than Australia (including any industry codes of conduct) that are applicable to the Deliverables, the Customer or the Contractor (**Laws**). If there are any changes to Laws during the Contract Period which are specific to the rail industry, and compliance with those changes requires the Contractor to incur material additional costs, the Contractor may raise a Change Request to address such additional costs.
Specify any codes, policies, guidelines or standards the Contractor is to comply with:	The Customer's policies, standards and procedures as notified to the Contractor from time to time. If there are any changes to standards or codes of conduct during the Contract Period which are specific to the rail industry, and compliance with those changes requires the Contractor to incur material additional costs, the Contractor may raise a Change Request to address such additional costs.

Item 31 Customer's Compliance with Standards, Codes and Laws

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Customer Warranties (clause 9.3(h))	
Specify any laws (other than Statutory Requirements) the Customer is to comply with:	None.
Specify any codes, policies, guidelines or standards the Customer is to comply with:	None.

Item 32 Acceptance Testing

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Part 3 Dictionary (clauses 1.2 to 1.4)	
Acceptance Test Notification Period is the period from the end of the Acceptance Test Period, within which the Customer must provide to the Contractor written notice of the result of the Acceptance Test. Specify this period: If no period is specified, the period is 2 Business Days:	2 Business Days or as otherwise agreed by the Parties.
Acceptance Test Data is the data that is provided by the Customer, and agreed by the Contractor that reflects the data the Customer will use in the Deliverable, that is to be used for Acceptance Testing. Specify the Acceptance Test Data:	The Acceptance Test Data for the Testing Phase (as defined in the PIPP) will be: a) the Data developed by the Configuration Team as described in Section 8.2 of the PIPP; and b) in relation to transaction data, as agreed between the Parties during SAT.
Acceptance Test Period is the period for the performance of any Acceptance Tests for any Deliverable. Specify this period: If no period is specified, the period is 10 Business Days from the date of delivery of the Deliverable to the Customer.	For the purposes of SAT (as described in the PIPP) – 20 Business Days or any other such time reasonably required to complete SAT. The Contractor's involvement in other tests contemplated within the PIPP shall be as required by and at the request of the Systems Integrator (as defined in the Additional Conditions).
Acceptance (clause 10.1)	
For each Deliverable, specify whether each Deliverable is to undergo Acceptance Testing: If not, the Deliverable will be Accepted under clause 10.1(a).	For Deliverables that are Documents, the approval procedure as specified in clause 13 of the Additional Conditions will apply. Licensed Software will be subject to Acceptance Testing as detailed in the PIPP. For clarity, initial delivery and physical receipt of the Licensed Software by the Customer does not constitute acceptance by the Customer of the Licensed Software. The Licensed Software will undergo Acceptance Testing during the Testing Phase, as set out in the PIPP.
If a Deliverable is not to undergo Acceptance Tests, specify the period required following delivery of the Deliverable as required by the Order Documents when the Actual Acceptance	For Deliverables that are Documents, the approval procedure as specified in clause 13 of the Additional Conditions will apply.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Date (AAD) for a Deliverable occurs: If no period is specified, then the period is 2 Business Days.	
Conducting Acceptance Tests (clause 10.3)	
For each Deliverable that is to undergo Acceptance Tests, specify details of the Acceptance Testing requirements:	As set out in the PIPP.
Specify the identification of the Deliverables or part of the Deliverables to be tested:	As specified in the PIPP.
Specify the allocation of each Party's responsibilities in relation to testing, including the Party responsible for conducting the Acceptance Tests:	The Contractor will be responsible for all activities relating to REM SAT testing (as described in the PIPP). Unless otherwise specified in the PIPP, the Systems Integrator is responsible for all other Acceptance Tests. The Contractor must provide all reasonable assistance as may be requested by the Systems Integrator in respect of the Acceptance Testing being undertaken by the Systems Integrator and as described in the PIPP.
Specify which Party is to provide the test environment, including hardware, software, power, consumables and other resources and when the environment and resources must be ready for use:	The Customer is responsible for the provision of the environments for Acceptance Testing unless stated otherwise in the PIPP.
Specify the methodology and process for conducting Acceptance Tests:	The methodology and process for conducting Acceptance Tests will be set out in the Test Strategy and Test Plans (as attached to the PIPP or developed in accordance with the PIPP), or as otherwise agreed by the Parties from time to time in writing.
Specify the scheduling of Acceptance Tests including the Acceptance Test Period and the Acceptance Test Notification Period:	Acceptance Tests will be scheduled as set out in the Master Project Schedule. An extract from the Master Project Schedule is attached to the PIPP as Appendix C.
Specify the Acceptance Criteria used to test whether the Deliverable meets the Contract Specification and other requirements of the Customer Contract:	As specified in the PIPP. **Note:** In addition to the Acceptance Criteria expressed in the PIPP, Acceptance Criteria may be amended by agreement by the Parties prior to commencement of the relevant Acceptance Test Phase.
Specify the Acceptance Test Data required:	As per "Acceptance Test Data" row above.
If an Acceptance Test document has been created that addresses the above points it can be attached to the General Order Form by identifying the document here:	Not applicable.

Item 33 Credit/Debit Card

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Payment (clause 11.3)	
Specify any credit/ debit card or electronic	Not applicable.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
facility that the Customer may use to pay the Contractor:	
Specify any fee that is applicable for payment by credit/debit card	None.

Item 34 Intellectual Property

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Existing Material (clauses 13.7 and 13.9)	
Specify any terms and condition applicable for granting a license for Existing Material owned by a third party:	The licence granted under clause 13.7 is granted on terms which are the same as the terms of the additional licence rights specified in clause 30 of the Additional Conditions. In the case of third party Existing Material that is open source software, the licence granted under clause 13.7 is granted on terms which incorporate terms set out in 29 of the Additional Conditions.
Specify any fees to be charged for any license to use any of Contractor's Existing Materials:	Nil.
Customer Owned New Material (clause 13.10)	
Specify if clause 13.10 applies, and if so, to which items of New Material:	Clause 13.10 applies. The Parties acknowledge and agree that no software will be New Material. However, other Material (including documentation) may be New Material.

Item 35 Confidentiality

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Confidentiality (clause 14.1)	
Specify if the Contractor must arrange for its Subcontractors to execute a Deed of Confidentiality substantially in the form of Schedule 8 – Deed of Confidentiality:	Yes. The Contractor must arrange for its Subcontractors to execute Deed of Confidentiality substantially in the form of Schedule 8.

Item 36 Insurance Requirements

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Insurance (clause 16.7)	
Level of indemnity of public liability insurance in respect of each claim for the period of cover. The default requirement in the Customer Contract is $10,000,000 [Only specify if a higher limit of cover that is required by the Customer Contract:]	The level of public liability insurance is $20,000,000.00 in respect of each claim and $50,000,000 in the annual aggregate. The insurance may be denominated in Euro, but must be equivalent in Australian dollars to $20,000,000. If at any time due to exchange rate fluctuations there is any change that would mean that the insurance held fell below $20,000,000 the Contractor must immediately notify the Customer and must take out such additional insurance as may be required in order to restore the level of cover.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Level of indemnity of product liability insurance for the total aggregate liability for all claims for the period of cover. The default requirement in the Customer Contract is $10,000,000 [Only specify if any higher limit of cover that is required by the Customer Contract:]	At least $20,000,000.00 for the total aggregate liability for all claims and in the annual aggregate. The insurance may be denominated in Euro, but must be equivalent in Australian dollars to $20,000,000. If at any time due to exchange rate fluctuations there is any change that would mean that the insurance held fell below $20,000,000 the Contractor must immediately notify the Customer and must take out such additional insurance as may be required in order to restore the level of cover.
If Services are being provided under the Customer Contract the default level of indemnity of professional indemnity insurance for the total aggregate liability for all claims for the period of cover is $1,000,000 [Only specify is a higher limit that is required by the Customer Contract:]	At least $10,000,000 for the total aggregate liability for all claims. The insurance may be denominated in Euro, but must be equivalent in Australian dollars to the requirements of this section. If at any time due to exchange rate fluctuations there is any change that would mean that the insurance held fell below those requirements the Contractor must immediately notify the Customer and must take out such additional insurance as may be required in order to restore the level of cover.
Specify any additional insurance that the Contractor is to hold, including the type of insurance, the term of the insurance and the amount of the insurance:	(a) Workers compensation insurance **Cover:** Liability for death of or injury (including occupations disease) to all workers performing the Services and Deliverables as required by *Workers Compensation Act 1987* (NSW). **Extension:** To be extended to cover the Principal's statutory liability to such workers, where permitted by *Workers Compensation Act 1987* (NSW). **Period required:** Before commencing the Services and Deliverables until the Contract Period expires. (b) Motor vehicle insurance – third party property **Cover:** All motor vehicles, trailers and mobile plant (whether registered or unregistered) used in connection with the Project. Any Subcontractors must be covered by motor vehicle insurance. **Period required:** Before commencing the Services until the Service Term expires and, after that, whenever Services are performed.

Item 37 Performance Guarantee

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Performance Guarantee (clause 17.2)	
Specify if the Contractor must arrange for a guarantor to enter into a Performance Guarantee:	Yes. The Contractor must provide a Performance Guarantee from Frequentis AG in the form specified in Schedule 9 to this Customer Contract.
Specify the date by which the Performance Guarantee must be provided to the Customer. If no date is specified the Contractor must provide the Performance Guarantee to the Customer within 30 days of the Commencement Date.	Within 10 Business Days after the Commencement Date, or any other such time that may be agreed by the Parties in writing.

Item 38 Financial Security

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Financial Security (clause 17.4)	
Specify if the Contractor must provide a Financial Security: If so, specify the amount of the Financial Security:	Yes. The Contractor will provide two separate Financial Securities in the form specified in Schedule 10 of the General Order Form for amounts equal to: • 10% of the Contract Price for Release 1 (Detailed Design plus Implementation) until 12 months after AAD for Release 1; and • 10% of the Contract Price for Release 3 (Detailed Design plus Implementation) until 12 months after AAD for Release 3. The Financial Security must be with the Australia and New Zealand Bank (or as otherwise agreed to by the Customer) and back to backed with Raiffeisen Bank Internationalin Austria.
Specify the date by which the Financial Security must be provided to the Customer: If no date is specified, the Contractor must provide the Financial Security within 14 days of the Commencement Date.	Within 10 Business Days after the Commencement Date for the Financial Security covering Release 1 and within 10 Business Days after the execution of the Change Request incorporating Release 3 for the Financial Security covering Release 3.

Item 39 Limitation of Liability

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Limitation of Liability (clause 18)	
If the Parties cannot agree the amount that is legally payable under the Customer Contract for the: • Non-Recurring Service or Product; and/or • Short Term Recurring Service (as applicable) insert the amount that the Parties agree is the best estimate of the Contract Value for the relevant item (the Estimated Contract Price). Note: It may be necessary to separately identity the amounts payable under a single Customer Contract into separate amounts that are attributable to each of the different types of Product/ Service. **(See the definition of Contract Value in Part 3)**	Liability is determined under clause 18.3.
If Services are being provided under any of the following Modules: Module 6 – IT Personnel; Module 7 – Professional Services; Module 8 – Data Management; Module 11 – Web Services; Module 16 - Project Management	The Services being providing under the Customer Contract will be Non-Recurring Services.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Services; Module 17 - Change Management Services; Module 18 - Knowledge Transfer Services; or Module 20 - Whole of Government Requirements specify whether the Parties regard the relevant Services as being: • the supply of a service of the same type on a periodic basis, and so are to be classified as Recurring Services for the purpose of the limitation of liability; or • provided in respect of a specific project where the Contractor has been engaged by a Customer to produce, create or deliver a specified outcome or solution that may be subject to Acceptance Testing, in which case the Services are to be classified as Non-Recurring Services for the purpose of the limitation of liability. **(See definition of Non-Recurring Services and Recurring Services in Part 3)**	
Specify the alternative cap of liability (clause 18.3):	Subject to any exception in Part 2 of the Customer Contract or Additional Conditions, the Contractor's liability in contract (including under an indemnity), tort (including negligence), breach of statutory duty or otherwise in respect of any loss, damage or expense arising out, of or in connection with, the Customer Contract will not exceed 2 times the Contract Price as set out in the PIPP from time to time.

Item 40 Performance Management Reports

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Reporting (clause 21.1)	
Specify the reports required, (if any), the time for provision and the agreed format:	As specified in the PIPP.

Item 41 Dispute Resolution

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Dispute Resolution (clause 24.11)	
Specify the threshold amount in AU$ for issues to be resolved by expert determination under clauses 24.7 to 24.8.	$50,000.00
Specify type of issue/s not to be determined by expert determination under clauses 24.7 to 24.8.	Subject to clause 24.11(a), all disputes arising out of or in connection with the Customer Contract are to be determined by expert determination under clauses 24.7 to 24.8.

Item 42 Termination for Convenience

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Termination for Convenience by the Customer (clause 25.4)	
Specify whether an amount is payable under clause 25.4(b) if the Customer exercises its right of termination for convenience under clause 25.3:	Clause 39 of the Additional Conditions specifies the costs that are recoverable under clause 25.4(b).

Item 43 Additional Conditions

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify any Additional Conditions: Note: where the Customer Contract is made under a Head Agreement the Customer must obtain the Contract Authority's and the Director General's NSW Department of Finance and Services consent where an Additional Condition varies a Protected Clause.	Yes. The Additional Conditions are set out in Annexure A to the Customer Contract.

This General Order Form is part of the Customer Contract and incorporates all Parts, terms and conditions and other documents listed in clause 3.8 of Part 2 as if repeated in full in this General Order Form.

SIGNED AS AN AGREEMENT

Signed for and on behalf of Sydney Trains (ABN 38 284 779 682)

By [*to be inserted by the Customer*] but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

Schedule 2 : Agreement Documents

Itemise all documentation (including any supplemental terms and conditions agreed to by the Customer, accepted tenders, offers or quotes from the Contractor, and any letter of acceptance or award issued by the Customer) between the Customer and the Contractor. All such documentation must be itemised in this Schedule 2 and listed below in descending date order (i.e. the latest document is listed first.)

Document	R1 REM Version Document	R1 REM Date of Document	R2 CIMS Version Document	R2 CIMS Date of Document
All Requirements (as defined in the PIPP) referenced or set out in the PIPP from time to time.				
Detailed Design Deliverables:				
High Level Solution Design	3.0	13/01/2016	3.0	5/08/2016
Architecture Specification	5.0	13/01/2016	2.0	15/07/2016
Functional Specification	6.0	12/01/2016	1.1	23/08/2016
Non-Functional Design	6.0	3/02/2016	3.2	15/08/2016
Integration Specification	5.0	20/02/2016	1.0	14/07/2016
Project Communication Plan	4.0	30/11/2015	v1.5.2	29/06/2016
Data Management Plan	6.0	10/02/2016	1.0	13/07/2016
Data Technical Analysis Outputs	6.0	5/02/2016		
Updated Technology Implementation Strategy	5.0	18/01/2016	3.0	13/07/2016
Technology Implementation Plan (Template)	3.0	3/02/2016	1.0	10/08/2016
Technology Test Strategy	6.1	4/02/2016	3.1	23/08/2016
Updated Project Management Plan	4.0	4/02/2016	3.0	3/08/2016
RACI	V2.00	1/02/2016	v1.0-2	25/05/2016
Updated Product Gap Analysis	3.0	13/01/2016	1.1	23/08/2016
System Test Plan	N/A	N/A		
Requirements Traceability Matrix	4.0	13/01/2016	3.5	23/08/2016
Technology Environment Management Strategy	9.0	13/01/2016	10.0	16/06/2016
Operating Model	1.0	24/02/2016		
Draft recommended ROC organisational structure				
Change Impact Analysis	3.0	13/01/2016		
Training Needs Analysis	V 1.1	2/02/2016		
High Level Solution Design Deliverables Acceptance Notice	20140417			
MS Interfaces Rev 2.3	20150303			
REM ER Diagram V32000 20150122	20150303			

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Implementation Strategy Frequentis R20 V10	20150310		3.0	13/07/2016
PMP R10 V10	20150310			
Extended Product Capabilities R20 V10	20150320			
High Level Solution Design R20 V10	20150320			
IMS Interfaces 2014 00754 R20 V10	20150320			
IMS OptionPaper Comms 2014 00754 R20 V10	20150320			
IMS OptionPaper UserInterface 2014 00754 R20 V10	20150320			
PMP 2014 00754 R20 V10	20150320			
REM Masterdata 2014 00754 R20 V10	20150320			
REM Roles User Cases 2014 00754 R20 V10	20150320			
Support Plan 2014 00754 R20 V10	20150320			
Training Plan REM 2014 00754 R10 V10	20150320			
Frequentis Clarification and Defects List 2014 00754 R20 V10	20150323			
Frequentis Response to Rail Operations Centre (ROC) Technology Solution Request For Proposal No WS178494	20140825			
Rail Operations Centre (ROC) Technology Solution Request For Proposal No WS178494	20140707			

Schedule 3: Service Level Agreement

The Parties shall negotiate the Service Level Agreement as part of future negotiations.

Schedule 4: Variation Procedures

1. Procedures

1.1 Each request or recommendation for a change to the PIPP or any part of the Customer Contract must be submitted in a form substantially similar to the Change Request form attached to this Schedule.

1.2 For each draft Change Request submitted:

(a) the Customer must allocate it with a sequential number;

(b) the draft Change Request must be logged and its progress documented by recording its status from time to time by the Contractor as follows:

(i) requested;

(ii) under evaluation;

(iii) awaiting authorisation;

(iv) cancelled;

(v) pending;

(vi) approved/authorised;

(vii) expired;

(viii) in progress;

(ix) applied;

(x) delivered;

(xi) accepted.

1.3 The Party receiving the draft Change Request must within 5 Business Days of receipt (or such longer period set out in the Change Request):

(a) request further information;

(b) provide written notification to the other Party of its approval or rejection of the Change Request.

1.4 If the Customer submits a draft Change Request to the Contractor, and the Contractor believes that there is more than 1 Business Day's work involved in the evaluation of the Change Request, then prior to commencing work on evaluating the draft Change Request the Contractor may request that the Customer pays for the work involved to evaluate the draft Change Request. The Customer may then either revise the draft Change Request to require less than 1 Business Day's work to evaluate it, or agree to pay for the Contractor's work to evaluate the Change Request in an amount agreed by the Parties, or in absence of agreement, at the Contractor's then current commercial rates.

1.5 If the Customer Contract has been entered into under a Head Agreement, and the Change Request seeks to vary a Protected Clause and the Customer approves of the Change Request, the Customer must submit the Change Request to the Contract Authority and the Director General, NSW Department of Finance and Services, for approval immediately after it has notified the Contractor that it approves the Change Request.

2. Status

2.1 A Change Request is binding on the Parties only when both Parties have signed it. Once signed by both parties the Change Request updates the Customer Contract in accordance with the terms of the Change Request. The Contractor must not implement any draft Change Request until the Customer has signed the Change Request form.

3. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number		*Insert Change Request Number (supplied by the Customer)*
Date of Change Request		*Insert date of draft Change Request*
Originator of need for Change Request		*Customer or Contractor*
Proposed Implementation Date of Change		*Insert proposed date of implementation*
Date of expiry of validity of Change Request		*Insert validity expiry date. The Change Request is invalid after this date.*
Contractor's estimated time and cost of evaluation		*Insert estimated time and cost of evaluation*
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**		*Insert amount to be paid to the Contractor for evaluating the draft Change Request*

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**
Insert date	*Insert version*	*Insert status/reason*	*Insert author*

DETAILS OF CHANGE REQUEST

Summary

[Insert a summary of the changes, if required]

SCOPE

[Insert changes to the scope of Products to be provided and/or any Services, including any extensions to the Contract Period.]

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

[Insert any changes to the Contract Specification]

EFFECT OF CHANGE ON PROJECT TIMETABLE

[Insert changes to the project timetable]

New PIPP (annexed)

[Annex new PIPP if required]

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

[Insert new charges and the timing of payment into the new PIPP]

CHANGES TO CSI

[Insert any changes to the CSI]

CHANGES TO CUSTOMER PERSONNEL

[Insert any changes to the Customer's Personnel]

CHANGES TO CUSTOMER ASSISTANCE

[Insert any changes to the Customer's Assistance]

PLAN FOR IMPLEMENTING THE CHANGE

[insert the plan for implementing the change – if any.]

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

[Insert the responsibilities of the respective Parties for implementing the change – if any.]

Responsibilities of the Contractor

[Insert the responsibilities of the Contractor for implementing the change – if any.]

Responsibilities of the Customer

[insert the responsibilities of the Customer for implementing the change – if any.]

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

[Insert if there will be any effect on the Acceptance Testing of any Deliverable – or alternatively insert None.]

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

[Insert if there will be any effect on performance of any Deliverable – or alternatively insert None.]

EFFECT ON USERS OF THE SYSTEM/SOLUTION

[Insert if there will be any effect on users of the system/solution – or alternatively insert None.]

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Changes will be required to the following documents:

[Add any other documents which may be affected.]

EFFECT ON TRAINING

Insert if there will an effect on training or alternatively insert None.]

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

[insert if there are any other matters.]

ASSUMPTIONS

The plan for implementing the changes outlined in this Change Request is based on the assumptions listed below:

[Insert any assumptions. If none then this section will be deleted].

If the assumptions are or become untrue, the Parties will address the effect of this through a subsequent Change Request.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

[Insert a list of the documents that form part of this Change Request]

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

[Insert amendments to clauses in the Customer Contract, relevant Schedules including Service Level Agreement]

Note that variations to any of the Protected Clauses require the Customer to obtain the Contract Authority's and the Director General, NSW Department of Finance and Services approval (clause 26.2))

AUTHORISATION

The Contractor must not commence work on the Change Request until is signed by both Parties. Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative*] but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

Schedule 5: Escrow Deed

Deed dated the _____ day of _____ 20 _____

Between [insert name, and ACN/ABN, if applicable] ("**Escrow Agent**")

_____

And [insert name, and ACN/ABN if applicable] ("the **Contractor**")

_____

And [insert name of Company that owns the IP] ("the **Owner**") [Frequentis AG]

_____

And [insert name of Government Party] ("the **Principal**")

_____

RECITALS

A. By License Agreement made on the ……. day of 201[ ], the Contractor (an affiliated company of the Owner) has agreed to grant a licence to the Principal to use the Licensed Software.

B. By the Support Agreement made on the ……. day of 201[ ], the Contractor has agreed to provide Software Support Services to the Principal in respect of that Licensed Software.

C. Owner (or its parent company) has guaranteed or intends to guarantee the performance obligations of the Contractor under the License Agreement and the Support Agreement as per the Performance Guarantee.

D. The Contractor, Owner and the Principal have agreed to appoint an escrow agent and the Escrow Agent has agreed to act as an escrow agent and to hold the Escrow Material for the Licensed Software on the following terms and conditions.

NOW THIS DEED WITNESS:

1. Agreed Terms and Interpretation

1.1 In this Deed the following words have the following meaning:

Business Day means any weekday that is not a public holiday in New South Wales;

Contract Specifications has the same meaning as in the License Agreement;

Deed means this Deed of Agreement;

Defect means a defect, error or malfunction in that software such that the Licensed Software does not comply with and cannot be used in accordance with the Contract Specifications;

Escrow Fees means the fees set out in Attachment 1 to this Deed;

Escrow Materials means the source code and/or object code of the Licensed Software and all other software programs as owned by the Owner and licensed through the Contractor and as needed to use or maintain the Licensed Software, documentation, drawings and plans as well as a list of any third party software programs that would enable a competent programmer skilled in the use of the Licensed Software and any necessary development tools to keep the Licensed Software in good order and repair that are stated in Attachment 3;

Insolvency Event means that the Owner:

(a) stops or suspends or threatens to stop or suspend payment of all or a class of its debts;

(b) is insolvent with the meaning of Section 95A of the Corporations Act 2001 (Cth);

(c) must be presumed by a court to be insolvent by reason of an event set out in Section 459C(2) of the Corporations Act 2001 (Cth);

(d) fails to comply with a statutory demand within the meaning of Section 459F(1) of the Corporations Act 2001 (Cth);

(e) has an administrator, liquidator or bankruptcy trustee appointed or any step preliminary to the appointment of an administrator, liquidator or bankruptcy trustee is taken;

(f) has a mortgagee enter into possession of any property of that party;

(g) has a controller within the meaning of the Section 9 of the Corporations Act 2001 (Cth) or similar officer or appointed to all or any of its property;

(h) has proceedings commenced, a resolution passed or proposed in a notice of meeting, an application to, or order of, a court made or other steps taken against or in respect of it (other than frivolous or vexatious applications, proceedings, notices or steps) for its bankruptcy, winding up, deregistration or dissolution or for it to enter an arrangement, compromise or composition with or assignment for the benefit of its creditors, a class of them or any of them, insofar as such action or event is related to the insolvency of the Owner; or

(i) an event as above in accordance with the laws of the country of incorporation of the Owner, insofar as such action or event is related to the insolvency of the Owner.

Or any of the above events occurs in relation to the Contractor and the Owner (or its parent company) does not continue to perform the obligations of the Contractor under the Licence Agreement to the reasonable satisfaction of the Principal;

License Agreement means the Customer Contract entered into under the *Procure IT Framework* dated [insert date] pursuant to which the Contractor is providing Licensed Software to the Principal referred to in Recital A;

Licensed Software means the software provided by the Contractor to the Customer and includes any Updates or New Releases of that software that may be provided to the Customer from time to time in accordance with the Software Support Agreement. For the purpose of this Escrow Deed and without affecting the License Agreement, Licensed Software does not include third party owned software or commercially available of-the-shelf third party software;

New Release means software which has been produced primarily to extend, alter or improve the Licensed Software by providing additional functionality or performance enhancement (whether or not Defects in the software are also corrected) while still retaining the original

designated purpose of the Licensed Software to the extent it has been delivered to the Principal;

Performance Guarantee means the Performance Guarantee entered into by the Owner (or its parent company) and the Principal under the *Procure IT Framework* dated [insert date];

Software Support Services means the services to be provided by the Contractor under the Support Agreement;

Support Agreement means the Customer Contract entered into under the *Procure IT Framework* dated [insert date] pursuant to which the Contractor is providing Software Support Services to the Principal in respect of Licensed Software referred to in Recital A; and

Update means software which has been produced primarily to overcome Defects in, or to improve the operation of, the Licensed Software without significantly altering the Contract Specifications whether or not the Licensed Software has also been extended, altered or improved by providing additional functionality or performance enhancement.

1.2 In this Deed, unless the contrary intention appears:

(a) monetary references are references to Australian currency;

(b) the clause and sub clause headings are for convenient reference only and have no effect in limiting or extending the language of the provisions to which they refer;

(c) a cross reference to a clause number is a reference to all its sub clauses;

(d) words in the singular number include the plural and vice versa;

(e) the words “include(s)” and “including” are not words of limitation;

(f) words importing a gender include any other gender;

(g) a reference to a person includes a partnership and a body whether corporate or otherwise;

(h) a reference to a clause or sub clause is a reference to a clause or sub clause of this Deed;

(i) a reference to an Attachment is a reference to an Attachment to this Deed; and

(j) where a word or phrase is given a particular meaning, other parts of speech and grammatical forms of that word or phrase have corresponding meanings.

1.3 Where an obligation is imposed on a party under this Deed, that obligation shall include an obligation to ensure that no act, error or omission on the part of that party’s employees, agents or subcontractors or their employees or agents occurs which will prevent the discharge of that party’s obligation.

COMPLIANCE WITH CONSUMER LAWS

1.4 To the extent that the provisions of the Competition and Consumer Act 2010 (Cth) (CCA) apply to goods or services supplied under this Customer Contract, then the provisions of this Customer Contract are subject to the provisions of the CCA.

1.5 To the extent that there is a failure to comply with a guarantee under sections 54 to 59 of the CCA in respect of goods which are not goods of a kind that are ordinarily acquired for personal, domestic or household use or consumption, then to the extent permitted by law, the

Contractor and the Owner's liability is limited to one or more of the following, at the election of the Contractor or the Owner as the case may be:

(a) the replacement of the goods or the supply of equivalent goods;

(b) the repair of the goods;

(c) the payment of the cost of replacing the goods or of acquiring equivalent goods;

(d) the payment of the cost of having the goods repaired.

1.6 To the extent that there is a failure to comply with a guarantee in respect of the supply of services under sections 60 to 62 of the CCA, then to the extent permitted by law, the Contractor or the Owner's liability is limited to one or more of the following, at the election of the Contractor or the Owner as the case may be:

(a) supplying the services again; or

(b) payment of the cost of having the services supplied again.

2. Duration

Subject to all applicable fees under this Deed being paid by the Principal in accordance with this Deed, this Deed remains in force until the Escrow Material is released in accordance with this Deed or this Deed is terminated or expires in accordance with its terms.

3. Appointment of Escrow Agent

The Escrow Agent is hereby appointed jointly by the Principal and the Owner to hold the Escrow Material and, if the conditions for release under clause 8 below are met, to release the Escrow Material in accordance with this Deed.

4. Owner's Obligations

4.1 The Owner shall deliver to, and deposit with, the Escrow Agent one copy of the Escrow Material within 7 days of the date of this Deed (or such other time as otherwise agreed).

4.2 The Owner shall maintain, amend, modify, up-date and enhance the Escrow Material quarterly and shall ensure on a quarterly basis that the Escrow Material deposited with the Escrow Agent is kept fully up-to date and accurately reflects the Licensed Software including all modifications, amendments, Updates and New Releases made to, or in respect of, the Licensed Software.

4.3 The Owner warrants to the Principal that the Escrow Material is, to the best of the knowledge of the Owner, free from any virus or program device which would prevent the Licensed Software from conforming with the Contract Specifications or which would prevent or impede a thorough and effective verification thereof.

4.4 For the avoidance of doubt, Contractor may fulfil Owner's obligations with similar discharging affect.

5. Escrow Agent's Obligations

5.1 The Escrow Agent shall accept custody of the Escrow Material on the date of delivery in accordance with clause 4.1 above and, subject to the terms and conditions of this Deed, shall hold the Escrow Material on behalf of the Principal and the Owner.

5.2 The Escrow Agent shall take all reasonable necessary steps to ensure the preservation, care, maintenance, safe custody and security of the Escrow Material while it is in the possession, custody or control of the Escrow Agent, including storage in a secure receptacle and in an atmosphere which does not harm the Escrow Material or in a secure electronic environment.

5.3 The Escrow Agent shall bear all risks of loss, theft, destruction of or damage to the Escrow Material while it is in the Escrow Agent's possession, custody or control where such loss, theft, destruction or damage is caused by negligent, malicious, reckless or unlawful act or omission of the Escrow Agent, its employees or agents.

5.4 If the Escrow Material is lost, stolen, destroyed or damaged while it is in the possession, custody or control of the Escrow Agent, the Escrow Agent shall immediately notify the Principal and the Owner.

5.5 Unless this Deed is terminated in accordance with clause 9.2(b) below, the Owner shall, upon receipt of notice from the Escrow Agent under clause 5.4 above, promptly deposit a replacement copy of the Escrow Material with the Escrow Agent.

5.6 Without limiting any other rights the Owner and the Principal may have under this Deed or at law, where the loss, damage or destruction of the Escrow Material is caused by the negligent, malicious, reckless or unlawful act or omission of the Escrow Agent, the Escrow Agent must reimburse the Owner for the reasonable cost of depositing a replacement copy of the Escrow Material.

5.7 The Escrow Agent is not obliged to determine the nature, completeness or accuracy of the Escrow Material lodged with it.

5.8 To the extent permitted by law, the Escrow Agent's liability, to both the Principal, the Contractor and the Owner collectively, in contract (including under an indemnity), tort (including negligence), breach of statutory duty or otherwise in respect of any loss, damage or expense arising out, of or in connection with, this Deed shall not exceed in aggregate for all claims that arise out, of or in connection with, this Deed the greater of:

(a) $100,000; or

(b) two times the Escrow Fees paid, or due and unpaid, in the year that the claim first arises.

6. Escrow Fee and Expenses

6.1 The Principal shall pay all applicable Escrow Fees plus any applicable GST to the Escrow Agent.

6.2 All expenses and disbursements incurred by the Escrow Agent in connection with this Deed shall be borne wholly and completely by the Escrow Agent.

6.3 All expenses and disbursements incurred by the Contractor or the Owner in connection with this Deed shall be borne wholly and completely by the Contractor or the Owner.

7. Testing and Verification

7.1 The Principal may engage the Escrow Agent or an independent assessor to undertake analysis and tests of the Escrow Material for verification purposes on its behalf.

7.2 The Escrow Agent shall release the Escrow Material to the independent party upon presentation of a release form signed by the Principal and the Owner specifying the material to be released and identifying the person to whom that material may be released.

7.3 The Escrow Material released pursuant to clause 7.2 above must be returned to the Escrow Agent or its employees or agents and the Principal shall ensure that the confidentiality of the Escrow Material so released is preserved and that it is not used for any purpose other than the verification that the Owner has complied with its obligations under this Deed.

7.4 All costs that Escrow Agent incurs in assisting the assessment shall be borne by the Principal, and must be paid within 7 days of receipt of an invoice from the Escrow Agent.

8. Release of the Escrow Material

8.1 The Escrow Agent shall not release, or allow access to, the Escrow Material except in accordance with the provisions of this Deed.

8.2 If:

(a) an Insolvency Event has occurred in relation to the Owner; or

(b) the Contractor has breached the Support Agreement or an Insolvency Event has occurred in relation to the Contractor, then the Principal may notify the Owner in writing that it requires the Owner under the Performance Guarantee to step-in and perform the obligations of the Contractor under the Support Agreement or the License Agreement (as applicable). The Owner must within 5 Business Days of receiving the Principal's notice, provide the Principal with written notice that it will perform the obligations of the Contractor in accordance with the Performance Guarantee. A Trigger Event will occur if:

(i) the Owner fails to provide written notice to the Principal within 5 Business Days as specified above; or

(ii) the Owner fails to comply with the Performance Guarantee,

(each of (a) and (b) being a **Trigger Event**),

and the Principal wishes the Escrow Agent to release the Escrow Material to it, the Principal must provide written notice in the form of a statutory declaration to both the Escrow Agent and the Owner stating which Trigger Event has occurred. If the Owner does not, within 20 Business Days of receiving the notice, rectify the Trigger Event or provide another remedy that is satisfactory to the Principal, the Principal may provide the Escrow Agent with a further statutory declaration confirming that the Owner has not rectified the Trigger Event in the required time or provided another remedy that is satisfactory to the Principal and require the Escrow Agent to immediately release the Escrow Material to the Principal ("**Final Release Notice**"). The Escrow Agent shall release the Escrow Material to the Principal promptly after receiving the Final Release Notice.

8.3 Where:

(a) the License Agreement has been lawfully terminated by the Contractor or the period of license has expired;

(b) the Support Agreement has been lawfully terminated by the Contractor or the period of Software Support Services has expired;

(c) the Principal has agreed to the release;

(d) this Deed is terminated in accordance with clause 9 below; or

(e) the Contractor is not obligated under the Agreement to execute a substantially similar Deed to replace this Deed,

the Escrow Agent shall, upon written request from the Owner, release the Escrow Material to the Owner.

8.4 The Principal:

(a) is granted a limited right to use any Escrow Materials subject to them being released under this Deed:

(iii) for the same usage rights as the Principal has been granted the right to use the Licensed Software under the License Agreement; and

(iv) to correct Defects in the Licensed Software; and

(b) subject to (c), must use the Escrow Materials subject to all the other terms of the License Agreement, as if the Escrow Material is included in the definition of Licensed Software in that License Agreement; and

(c) must keep the Escrow Materials strictly confidential and not disclose them to any person, and must not use them for any purpose other than that referred to in clause 8.5(a) above.

This clause 8 4 survives expiry or termination of this Deed.

9. Termination

9.1 The Escrow Agent may, by giving 3 months prior written notice to the Principal and the Owner, terminate this Deed subject to the pro-rata refund of any advance payment of the Escrow Fee.

9.2 The Principal or the Owner may terminate this Deed immediately if the Escrow Agent:

(a) has become subject to any form of insolvency administration; or

(b) is in breach of any obligation under this Deed so that there is a substantial failure by the Escrow Agent to perform or observe this Deed.

9.3 If this Deed is terminated in accordance with this clause 9 while the Agreement remains in force, and the Principal continues to use the Licensed Software, the Principal and the Owner shall enter into a new escrow agreement on substantially the same terms and conditions as are set out in this Deed, with an alternative escrow agent who is acceptable to both the Principal and the Owner.

9.4 The Principal and the Owner may, upon giving 30 days prior written notice to the Escrow Agent, jointly terminate this Deed, however in this case, no refund of advance payment of the Escrow Fee will be payable by the Escrow Agent.

10. Confidentiality

10.1 The Escrow Agent shall not, except as permitted by this Deed, make public or disclose to any person any information about this Deed or the Escrow Material.

10.2 The Escrow Agent shall not reproduce, or cause to have reproduced, a copy of the Escrow Material or any part thereof, except as may be necessary to electronically store (and maintain a back up) of the Escrow Material.

10.3 The obligations under this clause 10 shall survive the termination of this Deed.

11. Compliance with Laws

11.1 The Escrow Agent shall, in carrying out this Deed, comply with the provisions of any relevant statutes, regulations, by-laws and the requirements of any Commonwealth, State or local authority.

12. Resolution of Disputes

12.1 The parties agree to resolve any conflicts or issues between them in relation to this Deed as follows:

Negotiation

(a) if there is a disagreement between the parties arising out of this Deed (a "Dispute"), then within 10 Business Days of a party notifying the other party or parties of the Dispute, a senior representative from each party must meet and use all reasonable endeavours acting in good faith to resolve the Dispute by joint discussions.

Mediation

(b) If the Dispute is not settled within 10 Business Days of notification under clause 12.1(a), the parties must submit the Dispute to mediation administered by one of the following bodies as agreed by the parties:

(i) the Australian Commercial Disputes Centre Limited (**ACDC**);

(ii) the Institute of Arbitrators and Mediators Australia (**IAMA**); or

(iii) Lawyers Engaged in Alternative Dispute Resolution (**LEADR**); or

failing agreement, the ACDC.

(c) The mediator will be an independent person agreed between the parties or, failing agreement, a mediator will be appointed by the President of the body determined under clause 12.1(b) above.

(d) Any mediation meetings and proceedings under this clause 12.1 must be held in Sydney, New South Wales.

Court proceedings and other relief

(e) A party may not start court proceedings in relation to a Dispute until it has followed the procedures in this clause 12.1 but the parties have not agreed a resolution within 30 Business Days of the appointment of the mediator, unless the party seeks injunctive or other interlocutory relief.

Continuation of rights and obligations

(f) Despite the existence of a Dispute, each party must continue to perform this Deed.

13. Applicable Law

This Deed shall be governed by and construed in accordance with the laws from time to time in force in New South Wales. The parties shall submit to the exclusive jurisdiction of the courts of New South Wales.

14. Variation and Waiver

14.1 This Deed shall not be varied either in law or in equity except by a deed duly executed by the Escrow Agent, the Principal, the Owner and the Contractor.

14.2 A waiver by one party of a breach of a provision of this Deed by another party shall not constitute a waiver in respect of any other breach or of any subsequent breach of this Deed. The failure of a party to enforce a provision of this Deed shall not be interpreted to mean that party no longer regards that provision as binding.

15. Assignment

The Contractor, the Owner, the Principal and the Escrow Agent, or any of these, shall not assign, in whole or in part, its benefits under this Deed without the written consent of the other parties, which shall not be unreasonably withheld.

16. Severability

Each provision of this Deed, and each part of it shall, unless the context otherwise necessarily requires it, be read and construed as a separate and severable part, so that if any provision, or part of a provision is void or otherwise unenforceable for any reason, then that provision, or part shall be severed and the remainder shall be read and construed as if the severable part had never existed.

17. Notices

17.1 A notice or other communication is properly given or served if the party delivers it by hand, posts it or transmits a copy electronically (electronic mail or facsimile) to the address last advised by one of them to the other. Where the notice is given or served electronically, the sending party must confirm receipt by some other means. The address for services of notice for a party is, in the case of the:

Escrow Agent

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

Contractor

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

Principal

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

Owner

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

or such other address as a party may notify to the other party in writing from time to time.

17.2 A notice or other communication is deemed to be received if:

(a) delivered by hand, when the party who sent the notice holds a receipt for the notice signed by a person employed at the physical address for service;

(b) sent by post from and to an address within Australia, after three (3) Business Days;

(c) sent by post from or to an address outside Australia, after ten (10) Business Days; or

(d) sent by facsimile, at the time which the facsimile machine to which it has been sent records that the communication has been transmitted satisfactorily (or, if such time is outside normal business hours, at the time of resumption of normal business hours).

EXECUTED AS A DEED

Signed, sealed and delivered by [insert full legal name of Escrow Agent and ACN/ABN]

in accordance with s127 of the *Corporations Act* 2001 (Cth) by:

Signature Director	**Signature of Director/Secretary**
Print name	**Print name**
Date	**Date**

Signed, sealed and delivered by [insert full legal name of Contractor and ACN/ABN]

in accordance with s127 of the *Corporations Act* 2001 (Cth) by:

Signature Director	**Signature of Director/Secretary**
Print name	**Print name**
Date	**Date**

Signed for and on behalf of [insert full legal name of Owner and ACN/ABN]

[***Note: Execution clause to be confirmed.***]

By a duly authorised representative in the presence of:

Signature of authorised representative	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Signed, sealed and delivered by [insert full legal name of Principal and ACN/ABN]

in accordance with s127 of the *Corporations Act* 2001 (Cth) by:

Signature Director	**Signature of Director/Secretary**
Print name	**Print name**
Date	**Date**

Escrow Deed of Agreement

ATTACHMENT 1

Details of Escrow fees:

1 REVIEW OF FEES

Escrow Deed of Agreement

ATTACHMENT 2

Details of licensed software to be held in Escrow

Source Code:	
Flow Charts:	
Diagrams:	
Listings:	

Escrow Deed of Agreement

ATTACHMENT 3

Supporting materials

Insert details of support material relevant to the Licensed Software, for example:

- technical documentation sufficient to allow a competent computer programmer to understand and maintain the version of the software to which the documentation relates.
- relevant maintenance tools and compilers and assemblers (if standard tools, description thereof will suffice) and third party software utilities.
- description of code generation.
- description of third party software required for support and availability thereof.
- identification of key personnel involved with the development of the software.
- operational manuals, listings, flow charts etc.
- details of machine/processor/system configuration.

Schedule 6 : Deed Poll – Approved Agents

Not applicable

Schedule 7: Statutory Declaration – Subcontractor

Oaths Act (NSW), 1900 Ninth Schedule

I, _____ do solemnly and sincerely declare that to the best of my knowledge and belief:

1. CNS - Solutions & Support GmbH (**Subcontractor**) has been selected as subcontractor to, Frequentis Australasia Pty Ltd ABN 25 107 550 489 (**Contractor**) under an agreement between the Sydney Trains (ABN 38 284 779 682) (**Customer**) and the Contractor dated [*insert date of Customer Contract*].

2. The Subcontractor will offer to enter into an agreement with the Contractor in connection with the Customer Contract on terms that are not inconsistent with the terms of the Customer Contract in so far as those terms are relevant to the Subcontractor.

3. As at the date of this Statutory Declaration there are no reasons of which I am aware that would prevent the Subcontractor's agreement with the Contractor from being performed in a manner that would allow the satisfactory and timely performance of that subcontract.

And I make this solemn declaration, as to the matter aforesaid according to the law in this behalf made, and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Declared at _____

the _____ day of _____ 20 _____

Before me, _____

Schedule 8: Deed of Confidentiality

Deed of Agreement dated the _____ day of _____ 20 _____

Between Sydney Trains (ABN 38 284 779 682) (**Customer**)

And CNS - Solutions & Support GmbH (**Subcontractor**)

RECITALS

(A) In the course of the Subcontractor assisting in the supply by the Contractor of certain Deliverables for the Customer under a subcontract agreement between the Subcontractor and the Contractor, the Subcontractor will have access to, and may become aware of, Confidential Information belonging to, or in the possession of, the Customer.

(B) Improper use or disclosure of the Confidential Information would severely damage the Customer's ability to perform its governmental/statutory functions and would severely damage the commercial interests of the Customer.

(C) The Customer requires, and the Subcontractor agrees, that it is necessary to take all reasonable steps (including the execution of this Deed) to ensure that the Customer's Confidential Information is kept confidential.

(D) This Deed sets out the terms on which the Subcontractor will have access to the Confidential Information.

WHAT IS AGREED

1. Recitals

The Parties acknowledge the truth and accuracy of the Recitals.

2. Interpretation

DEFINITIONS

2.1 In the interpretation of this Deed unless a contrary intention appears the following expressions will have the following meanings:

Agreement means the Customer Contract entered into under the *Procure IT Framework* between the Contractor and the Customer under which the Contractor will supply Deliverables to the Customer dated [insert date].

Business Day means any day that is not a Saturday, Sunday or a public holiday in New South Wales.

Confidential Information means information that:

(a) is by its nature confidential; or

(b) is communicated by the Customer to the Subcontractor as confidential; or

(c) the Subcontractor knows or ought to know is confidential; or

(d) relates to:

(i) the Products and Services;

(ii) the financial, the corporate and the commercial information of the Customer;

(iii) the affairs of a third party (provided the information is non-public); and

(iv) the strategies, practices and procedures of the State and any information in the Subcontractor's possession relating to the State public service,

but excludes any information which the Subcontractor can establish was:

(v) in the public domain, unless it came into the public domain due to a breach of confidentiality by the Subcontractor or another person;

(vi) independently developed by the Subcontractor; or

(vii) in the possession of the Subcontractor without breach of confidentiality by the confidant or other person.

Contractor means Frequentis Australasia Pty Ltd (ABN 25 107 550 489).

Deliverables means any product or service and any associated material offered for supply or provided by the Contractor in accordance in the Agreement.

Express Purpose means the Subcontractor performing the obligations under its subcontract agreement with the Contractor.

Intellectual Property Rights means all intellectual property rights including:

(a) copyright, patent, trademark, design, semi-conductor or circuit layout rights, registered design, trademarks or trade name and other protected rights, or related rights, existing worldwide; and

(b) any licence, consent, application or right, to use or grant the use of, or apply for the registration of, any of the rights referred to in (a),

but does not include the right to keep confidential information confidential, moral rights, business names, company names or domain names.

Notice means notice in writing given in accordance with this Deed.

State means the State of New South Wales.

GENERAL

2.2 Headings are for convenience only, and do not affect interpretation. The following rules also apply in interpreting this Deed, except where the context makes it clear that a rule is not intended to apply

2.3 A reference to:

(a) legislation (including subordinate legislation) is a reference to that legislation as amended, re-enacted or replaced ,and includes any subordinate legislation issued under it;

(b) a document or agreement, or a provision of a document or agreement, is a reference to that document, agreement or provision as amended, supplemented, replaced or novated;

(c) a person includes any type of entity or body of persons whether or not it is incorporated or has a separate legal entity;

(d) anything (including a right, obligation or concept) includes each part of it.

2.4 If this Deed expressly or impliedly binds more than one person then it shall bind each such person separately and all such persons jointly.

2.5 A singular word includes the plural, and vice versa.

2.6 A word which suggests one gender includes the other gender.

2.7 The words “include(s)” and “including” are not words of limitation.

2.8 If a word is defined, another part of speech of that word has a corresponding meaning.

3. Non disclosure

3.1 The Subcontractor must not disclose the Confidential Information to any person without the prior written consent of the Customer.

3.2 The Customer may grant or withhold its consent in its discretion.

3.3 If the Customer grants its consent, it may impose conditions on that consent, including a condition that the Subcontractor procures the execution of a Deed in these terms by the person to whom the Subcontractor proposes to disclose the Confidential Information.

3.4 If the Customer grants consent subject to conditions, the Subcontractor must comply with those conditions.

3.5 Despite clause 3.1, the Subcontractor may disclose the Confidential Information:

(a) to its directors, officers, employees and contractors;

(b) to the Contractor and its directors, officers, employees and the Contractor’s other contractors who are engaged in the supply of the Deliverables and their directors, officers, employees,

each referred to as **permitted recipients**, where such disclosure is essential to carrying out their duties in respect of the Express Purpose.

3.6 Despite clause 3.1, the Subcontractor may disclose the Confidential Information:

(a) to its lawyers, accountants, insurers, financiers and other professional advisers where the disclosure is in connection with advising on, reporting on, or facilitating the performance under this Deed; or

(b) if the Subcontractor is required to disclose by law, order of a court or tribunal of competent jurisdiction or the listing rules of an applicable securities exchange.

3.7 Before disclosing the Confidential Information to a permitted recipient, the Subcontractor will ensure that the permitted recipient is aware of the confidentiality requirements of this Deed and is advised that it is strictly forbidden from disclosing the Confidential Information or from using the confidential information other than as permitted by this Deed.

3.8 The Confidential Information must not be copied or reproduced by the Subcontractor or the permitted recipients without the expressed prior written permission of the Customer, except as for such copies as may be reasonably required for the Express Purpose.

3.9 If any person, being any director, officer, contractor or employee of the Subcontractor, who has had access to the Confidential Information in accordance with this clause 3 leaves the service or employ of the Subcontractor then the Subcontractor will procure that that person does not do or permit to be done anything which, if done or permitted to be done by the Subcontractor, would be a breach of the obligations of the Subcontractor under this Deed.

4. Restriction on use

4.1 The Subcontractor must use the Confidential Information only for the Express Purpose and must not without the prior written consent of the Customer use the Confidential Information for any purpose other than the Express Purpose.

4.2 The Subcontractor must, unless otherwise authorised by the prior written consent of the Customer:

(a) treat as confidential and secret all of the Confidential Information which the Subcontractor has already acquired or will acquire from the Customer;

(b) take proper and adequate precautions at all times and enforce such precautions to preserve the confidentiality of the Confidential Information and take all necessary action to prevent any person obtaining access to the Confidential Information other than in accordance with this Deed;

(c) not directly or indirectly use, disclose, publish or communicate or permit the use disclosure, publication or communication of the Confidential Information to any person other than in accordance with this Deed;

(d) not copy or disclose to any person in any manner any of the Confidential Information other than in accordance with this Deed; and

(e) ensure that the permitted recipients comply with the terms of this Deed and keep the Confidential Information confidential and not use or disclose the Confidential Information other than as permitted by this Deed.

5. Survival

5.1 This Deed will survive the termination or expiry of the Agreement for a period of 6 years.

6. Rights of the Customer

PRODUCTION OF DOCUMENTS

6.1 The Customer may demand the delivery up to the Customer of all documents in the possession or control of the Subcontractor containing the Confidential Information.

6.2 The Subcontractor must immediately comply with a demand under this clause 6.

6.3 If the Customer makes a demand under this clause 6, and documents containing the Confidential Information are beyond the Subcontractor's possession or control, then the Subcontractor must provide full particulars of the whereabouts of the documents containing the Confidential Information, and the identity of the person in whose possession or control they lie.

6.4 In this clause 6, "documents" includes any form of storage of information, whether visible to the eye or not.

LEGAL PROCEEDINGS

6.5 The Customer may take legal proceedings against the Subcontractor or third parties if there is any actual, threatened or suspected breach of this Deed, including proceedings for an injunction to restrain such breach.

7. Indemnity and release

7.1 The Subcontractor is liable for, and agrees to indemnify and keep indemnified the Customer in respect of, any claim, damage, loss, liability, cost, expense, or payment which the Customer suffers or incurs as a result of:

(a) a breach of this Deed (including a breach of this Deed which results in the infringement of the rights of any third party); or

(b) the disclosure or use of the Confidential Information by the Subcontractor or the permitted recipients other than in accordance with this Deed.

8. No exclusion of law or equity

This Deed does not exclude the operation of any principle of law or equity intended to protect and preserve the confidentiality of the Confidential Information.

9. Waiver

9.1 No waiver by the Customer of one breach of any obligation or provision of this Deed will operate as a waiver of another breach of any other obligation or provision of this Deed.

9.2 None of the provisions of this Deed will be taken to have been varied waived discharged or released by the Customer unless by its express consent in writing.

10. Remedies cumulative

CUMULATIVE

10.1 The rights and remedies provided under this Deed are cumulative and not exclusive of any other rights or remedies.

OTHER INSTRUMENTS

10.2 Subject to the other covenants of this Deed, the rights and obligations of the parties pursuant to this Deed are in addition to and do not derogate from any other right or obligation between the parties under any other Deed or agreement to which they are parties.

11. Variations and amendments

No term or provision of this Deed may be amended or varied unless reduced to writing and signed by the parties in the same manner as this instrument.

12. Applicable law

This Deed will be governed and construed in accordance with the laws of the State.

13. Notices

13.1 Notices must be sent to the other party at the address shown in this Deed, or the address last notified to the other party in writing, or in the case of the Subcontractor, at the Subcontractor's registered office.

13.2 All notices must be in writing and signed by the relevant party and must be given either by hand delivery, post or facsimile transmission.

13.3 If delivery or receipt of a notice is not made on a Business Day, then it will be taken to be made on the next Business Day.

EXECUTED AS A DEED

Signed, sealed and delivered by Sydney Trains (ABN 38 284 779 682)

By [*to be inserted by the Customer*] but not so as to incur personal liability

In the presence of: [insert name of witness]

Signature of Customer	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Signed, sealed and delivered by CNS - Solutions & Support GmbH

By [*to be inserted by the Subcontractor*] but not so as to incur personal liability

In the presence of: [insert name of witness]

Signature of Subcontractor	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Schedule 9: Performance Guarantee

Deed dated the _____ day of _____ 20 _____

Between [insert full legal name of the Customer] (Customer)

Sydney Trains (ABN 38 284 779 682)

And [*insert full legal name and any ACN/ABN of the Guarantor*] (Guarantor)

Frequentis AG (ATU14715600)

Purpose: Frequentis Australasia Pty Ltd (ABN 25 107 550 489) (Contractor) has agreed to offer to supply Products and Services to the Customer under a contract dated [*insert date of Customer Contract*] (Customer Contact).

DEFINITIONS

Business Day means any weekday that is not a public holiday in New South Wales.

Insolvency Event means where the Contractor:

(a) stops or suspends or threatens to stop or suspend payment of all or a class of its debts;

(b) is insolvent with the meaning of Section 95A of the *Corporations Act* 2001 (Cth);

(c) must be presumed by a court to be insolvent by reason of an event set out in Section 459C(2) of the *Corporations Act* 2001 (Cth);

(d) fails to comply with a statutory demand within the meaning of Section 459F(1) of the *Corporations Act* 2001 (Cth);

(e) has an administrator, liquidator or bankruptcy trustee appointed or any step preliminary to the appointment of an administrator, liquidator or bankruptcy trustee is taken;

(f) has a mortgagee enter into possession of any property of that Party;

(g) has a controller within the meaning of the Section 9 of the *Corporations Act* 2001 (Cth) or similar officer appointed to all or any of its property; or

(h) has proceedings commenced, a resolution passed or proposed in a notice of meeting, an application to, or order of, a court made or other steps taken against or in respect of it (other than frivolous or vexatious applications, proceedings, notices or steps) for its bankruptcy, winding up, deregistration or dissolution or for it to enter an arrangement, compromise or composition with or assignment for the benefit of its creditors, a class of them or any of them.

Notice in Writing means a notice signed by a party's authorised representative or his/her delegate or agent.

BY THIS DEED

By this Deed, the Guarantor guarantees to the Customer the performance of the obligations undertaken by the Contractor under the Customer Contract on the following terms and conditions:

1. If the Contractor (unless relieved from the performance of the Customer Contract by the Customer or by statute or by a decision of a tribunal of competent jurisdiction) fails to execute and perform its undertakings under the Customer Contract, the Guarantor will, if required to do so by the Customer, complete or cause to be completed the undertakings contained in the Customer Contract.

2. Where the Guarantor consists of more than one legal person each of those persons agree to be bound jointly and severally by this Deed of Guarantee, and the Customer may enforce this Deed of Guarantee against all or any of the persons who constitute the Guarantor.

3. The Guarantor will not be discharged, released or excused from this Deed of Guarantee by an arrangement made between the Contractor and Customer with or without the consent of the Guarantor, or by any alteration, amendment or variation in the obligations assumed by the Contractor or by any forbearance whether as to payment, time, performance or otherwise.

4. The obligations of the Contractor will continue in force and effect until the completion of the undertakings of this Deed of Guarantee by the Guarantor.

5. The obligations and liabilities of the Guarantor under this Deed of Guarantee will not exceed the obligations and liabilities of the Contractor under the Customer Contract.

6. Where the Contractor has failed to perform under the Customer Contract, the obligations of the Guarantor will continue even though the Contractor has been the subject of an Insolvency Event.

7. The rights and obligations under this Deed of Guarantee will continue until all obligations of the Contractor under the Customer Contract have been performed, observed and discharged.

8. A notice under this Deed of Guarantee must be a Notice in Writing.

9. The address for services of Notices in Writing under this Deed of Guarantee for a party is, in the case of the:

Guarantor

Physical address

Postal address

Fax number

Contractor

Physical address

Postal address 10/14 Ashtan Place, Banyo QLD 4014

Fax number

Customer

Physical address

Postal address Level 13, 477 Pitt Street, Sydney NSW 2000

Fax number

Or such other address as a party may notify to the other party in writing from time to time.

10. A Notice in Writing is deemed to be received if:

    (a) delivered by hand, when the party who sent the notice holds a receipt for the notice signed by a person employed at the physical address for service;

    (b) sent by post from and to an address within Australia, after 3 Business Days;

    (c) sent by post from or to an address outside Australia, after 10 Business Days;

    (d) sent by facsimile, at the time which the facsimile machine to which it has been sent records that the communication has been transmitted satisfactorily (or, if such time is outside normal business hours, at 9.00 am the next Business Day).

11. The laws of the New South Wales govern the this Deed of Guarantee and the parties submit to the exclusive jurisdiction of the courts of New South Wales.

EXECUTED BY THE PARTIES AS A DEED AT THE DATE STATED BELOW

Signed, sealed and delivered by [insert name of the Customer].

Sydney Trains (ABN 38 284 779 682)

By [*insert name of Customer representative*]

In the presence of: [*insert name of witness not a party to this Deed*]]

Signature of Customer representative	**Signature of Customer's Witness**
Print Name	**Print Name**
Date	**Date**

Signed, sealed and delivered by [insert name of Guarantor]

Frequentis AG (ATU14715600)

with registered office of:

In the presence of: [*insert name of witness not a party to this Deed*]]

Signature of Guarantor representative	**Signature of Guarantor's Witness**
Print Name	**Print Name**
Date	**Date**

Schedule 10: Performance Security

Deed Poll dated the _____ day of _____ 20 _____

In favour of Sydney Trains ABN 38 284 779 682 (**Customer**)

Level 9 (North Wing)] Sydney Central Building, 477 Pitt Street Sydney New South Wales 2000

Issued by [*insert name and ACN/ABN*] (**Guarantor**)

[insert address]

BY THIS DEED POLL:

1. Frequentis Australasia Pty Ltd (ABN 25 107 550 489) (**Contractor**) has agreed to supply Deliverables to the Customer under a contract dated [insert] between the Contractor and the Customer (**Customer Contract**).

2. The Guarantor irrevocably and unconditionally undertakes to pay to the Customer on their first demand in writing without reference to the Contractor and separate from any notice given by the Contractor to the Guarantor not to pay same, any sum or sums which may from time to time be demanded in writing by the Customer to a maximum aggregate sum of $[insert].

3. Any demand has to be accompanied by the Customer's written notice that the demand has been made in accordance with section 9 of this Performance Security.

4. The Guarantor's liability under this Performance Security will be a continuing liability until the sooner of:

(a) the date payment is made up to the maximum aggregate sum;

(b) the date the Customer notifies the Guarantor that this Performance Security is no longer required; and

(c) [insert].

5. Any demand received at the Guarantor's address after the earlier of the dates specified in clauses 41.1(a), 41.1(b) or 41.1(c) above shall not be honoured.

6. No provision of this Performance Security may be waived, amended, supplemented or otherwise modified except by written notification signed by the Guarantor and the Customer.

7. The Guarantor may at any time, without being required to do so, pay the Customer the maximum aggregate sum or, after having made a part payment of the maximum aggregate sum, the balance outstanding or any lesser amount that the Customer may require and thereupon this Performance Security expires.

8. The Guarantor will deal with this Performance Security in accordance with any applicable anti-money laundering, counter-terrorism financing or economic or trade sanctions laws or regulations.

9. Guarantor acknowledges and agrees that this Deed Poll may be relied upon and enforced by the Customer in accordance with its terms even though the Customer is not a party to it.

10. The laws of New South Wales govern this Performance Security and the parties submit to the exclusive jurisdiction of the courts of New South Wales.

11. A demand, notice or any other communication by the Customer to the Guarantor is properly given or served if it is in writing and duly signed for and on behalf of the Customer and received in original by hand, registered post or courier service, in a letter addressed to the Guarantor, at its below address. Any notice to the Customer is properly given or served if it is in writing signed by or on behalf the Guarantor and is sent by registered post or courier service in a letter addressed to Customer at its below address.

12. The address for services of notice for a party is, in the case of the:

Guarantor

Physical address *[insert]*

Postal address *[insert]*

Customer

Postal address *[insert]*

or such other address as a party may notify to the other party in writing from time to time.

Executed as a deed poll

[Insert execution block for Guarantor.]

[By single attorney]

Signed sealed and delivered for **[insert name of Guarantor]** by their attorney

sign here ► _____

Attorney

print name _____

in the presence of

sign here ► _____

Witness

print name _____

print address _____

[By multiple attorneys]

	Signed sealed and delivered for **[insert name of Guarantor]** by their attorneys

sign here ► _____ _____

Attorney Attorney

print name _____ _____

in the presence of

sign here ► _____ _____

Witness Witness

print name _____ _____

print address _____ _____

[By common seal]

The Common Seal of [*insert Guarantor's name & ACN/ABN*]

was affixed by [*authority of the Board of Directors*]

in the presence of [*insert name of Director/Secretary or other permanent officer*]

in the presence of [*insert name of Director/Secretary or other permanent officer*]

Signature of Director/Secretary **Signature of Director/Secretary**

Print name **Print name**

Date

Schedule 11: Dispute Resolution Procedures

1. Expert Determination

1.1 If a Referral Notice is submitted under clause 24.7 of the Customer Contract, the expert is to be agreed between the Parties. If they cannot agree within 28 days of the Referral Notice, the expert is to be nominated on the application of either Party by the Chief Executive Officer, Australian Commercial Disputes Centre of NSW.

1.2 The expert nominated must be a person who is an experienced Australian legal practitioner or a person with practical experience in the technology that is the subject matter of the dispute, unless otherwise agreed. The expert must not be:

(a) an employee of the Parties;

(b) a person who has been connected with this Customer Contract or has a conflict of interest, as the case maybe; or

(c) a person who the Parties have not been able to agree on.

1.3 The expert may appoint any person that the expert believes will be able to provide the specialists skills that are necessary to make a determination, including an Australian legal practitioner. The expert must consult with both Parties prior to appointing such person.

1.4 When the person to be the expert has been agreed or nominated, the Customer, on behalf of both Parties, must engage the expert by letter of engagement (and provide a copy to the Contractor) setting out:

(a) the issue referred to the expert for determination;

(b) the expert's fees;

(c) the procedure for the determination set out in this Schedule; and

(d) any other matter which is relevant to the engagement.

2. Submissions

2.1 The procedure for submissions to the expert is as follows:

(a) The Party that has referred the issue to expert determination must make a submission in respect of the issue, within 30 Business Days after the date of the letter of engagement referred to in clause 1.4.

(b) The other Party must respond within 30 Business Days after receiving a copy of that submission. That response may include cross-claims.

(c) The Party referred to in clause 2.1(a) may reply to the response, but must do so within 20 Business Days after receiving the response, and must not raise new matters.

(d) The other Party may comment on the reply, but must do so within 20 Business Days after receiving the reply, and must not raise new matters.

(e) The expert must ignore any submission, response, reply, or comment not made within the time given in this clause 2.1, unless the Customer and the Contractor agree otherwise.

(f) The expert may request further information from either Party. The request must be in writing, with a time limit for the response. The expert must send a copy of the request and response to the other Party, and give the other Party a reasonable opportunity to comment on the response.

(g) All submissions, responses, replies, requests and comments must be in writing. If a Party gives information to the expert, it must at the same time give a copy to the other Party.

3. Conference

3.1 The expert must arrange at least one conference with both Parties. The request must be in writing, setting out the matters to be discussed.

3.2 Each Party is entitled to be represented at any preliminary conference before the expert by its legal representatives and other authorised representatives, with information and knowledge of the issues.

3.3 The expert is not bound by the rules of evidence and may receive information in any manner the expert sees fit, but must observe the requirements of procedural fairness. Consultation between the expert and a Party must only take place in the presence of the other Party, unless a Party fails to attend a conference or meeting which has been convened by the expert and of which prior notice has been given. Any Party providing information to the expert must provide that information to the other Party.

3.4 The Parties agree that such a conference is considered not to be a hearing that would give anything under this Schedule the character of arbitration.

3.5 In answer to any issue referred to the expert by a Party, the other Party can raise any defence, set-off or counter-claim.

4. Questions to be determined by the Expert

4.1 The expert must determine for each issue the following questions (to the extent that they are applicable to the issue):

(a) is there an event, act or omission that gives the claimant a right to compensation under the Customer Contract:

(i) for damages for breach of the Customer Contract, or

(ii) otherwise in law?

(b) if so:

(i) what is the event, act or omission?

(ii) on what date did the event, act or omission occur?

(iii) what is the legal right which gives rise to the liability to compensation?

(iv) is that right extinguished, barred or reduced by any provision of the Customer Contract, estoppel, waiver, accord and satisfaction, set-off, cross-claim, or other legal right?

(c) in the light of the answers to clause 4.1:

(i) What compensation, if any, is due from one Party to the other and when did it fall due?

(ii) What interest, if any, is due when the expert determines that compensation?

4.2 The expert must determine for each issue any other questions required by the Parties, having regard to the nature of the issue.

4.3 The Parties must share equally the fees of the expert, any other costs associated with the process, including room hire expenses, transcript expenses and the like and the fees of any person appointed by the expert under clause 1.3 for the determination, and bear their own expenses.

4.4 If the expert determines that one Party must pay the other an amount exceeding the amount specified in General Order Form (calculating the amount without including interest on it and after allowing for set-offs), then either Party may commence litigation, but only within 56 days after receiving the determination.

4.5 Unless a Party has a right to commence litigation or otherwise resolve the dispute under the Customer Contract:

(a) in the absence of a manifest error the Parties must treat each determination of the expert as final and binding and give effect to it; and

(b) if the expert determines that one Party owes the other money, that Party must pay the money within 20 Business Days.

5. Role of Expert

5.1 The expert must:

(a) act as an expert and not as an arbitrator, adjudicator or as expert witness;

(b) make its determination on the basis of the submissions of the Parties, including documents and witness statements, and the expert's own expertise;

(c) act impartially, free of bias and with no vested interest in the outcome of the dispute;

(d) adopt procedures for the Expert Determination suitable to the circumstances of the dispute so as to provide for an expeditious cost effective and fair means for the determination of the dispute; and

(e) issue a certificate in a form the expert considers appropriate, stating the expert's determination and giving reasons, within 45 Business Days after the receipt of the information in clause 2.1(d).

5.2 If a certificate issued by the expert contains a clerical mistake, an error arising from an accidental slip or omission, a material miscalculation of figures, a mistake in the description of any person, matter or thing, or a defect of form, then the expert must correct the certificate and give notice to the Parties of such correction.

6. Confidentiality

6.1 Each Party involved in the expert determination process, including the expert, the Parties, their advisors and representatives shall maintain the confidentiality of the expert determination process and may not use or disclose to anyone outside of the expert determination process, the expert's determination, or any information received or obtained, in the course of the expert determination process, including the existence of that information, except to the extent:

(a) the Parties have otherwise agreed in writing;

(b) the information is already in the public domain;

(c) disclosure is required to a Party's insurers, auditors, accountants or other professional advisers;

(d) disclosure is required for the purposes of any legal proceedings relating to the dispute or the expert's determination; or

(e) disclosure is otherwise required by law.

MODULE ORDER FORM
MODULE 3 – LICENSED SOFTWARE

Box 1 Approved Purpose

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.1)	
Specify what purpose is the Licensed Software used for. If no other purpose is specified in this Box the Approved Purpose is the internal processing of the Customer's own data.	The Approved Purpose includes use of the Licensed Software for the internal processing of the Customer's own data, as well as the data of Transport for NSW, NSW Trains, RailCorp and any NSW Government agency from time to time that owns or operates a rail network.

Box 2 Class of Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.2)	
Specify the specific rights that are granted by the Contractor to the Customer to use the Licensed Software. The Class of Licence defines the Price, e.g. If the Licensed Software is licensed for X "Named Users", the Class of Licence must define what a "Named User" is. Examples of the types of issues that are included in the Class of Licence include: (a) the Licence Period; (b) number and type of user; (c) number, type or capacity of Hardware; or (d) any other licence restriction/right. Also specify whether the Customer is granted the right to transfer the Licensed Software to an outsourcer in accordance with clause 2.17. [Note: If this Box is not completed then the Contractor grants the Customer the default rights to use the Licensed Software and User Documentation as described in clauses 2.2 and 2.9 of	Release 1 Licensed Software comprises each of the licenses set out below for REM 2016.R2.and REM Mobile 2016.R2. The Licence Period is perpetual. **REM Server Licences** Each Instance/Server • ICM Platform Licence - 2 licences (main and backup site) • Application Server Licence – 4 licences (two redundant servers per site) • Web Server Licence - 4 licences (two redundant servers per site) • REM Mobile Server Licence – 4 Licences (two redundant servers per site) **REM Gateway Licences** Each Server/Client • Incident Information Exchange-Gateway - Gateway - 4 licenses (two redundant servers per site) • Email-Gateway - 4 licences (two redundant servers per site) • SMS-Gateway - 4 licences (two redundant servers per site) **REM Extension Licences**

Module 3.]	Each Instance • Notifications Module – 2 instances • Document Management Module – 2 instances **REM Client and User Licences** Each Working Position/Client/User • Data Management Client – 5 working positions (node locked) • Incident Management Client – 50 working positions (node locked) • Named User – 2200 named users (incident management client/data management client/we client) • REM Mobile Notification Sender App – Up to 500 devices (licenced per device) **Definition Named User:** Named user is an active entry in the list of users maintained in the REM DMC Client. The fee for the Licensed Software is not impacted by the environment in which it is used. No additional charges shall apply to the Licensed Software when used in the Cloud or Data centre environments. The Customer is granted the right to transfer the Licensed Software to an outsourcer in accordance with clause 2.17 of this Module.

Box 3 Designated Equipment

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.3)	
Specify the hardware platform/operating system combination upon which the Licensed Software is installed. [Note: Specify the type and version number of the operating system and capacity/model of the Hardware, especially if the Class of Licence is based on type or size of capacity of the Hardware.]	Use of the Licensed Software is not limited to any Designated Equipment for purposes of clauses 2 or 3 of Module 3. For purposes of clause 8 of Module 3, the hardware platform/operating system combinations upon which the Licenced Software is installed are as set out in the configuration specification described in the: a) Non Functional Requirements Specification; b) ROC Release 1 – IMS Architecture Specification for REM Rel 2016.1; and c) TEMS (as referenced in Schedule 2 of the Customer Contract (Agreement Documents)).

Box 4 Third Party Components

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.14)	
Third Party Components Specify if the details of any software components, plug-ins and other programs are owned by third parties. This should include name and version number of each Third Party Component. Specify if the Third Party Components are supplied by the Contractor: (a) as part of the Licensed Software; or (b) as a Reseller (in which case Box 11 must be completed) [Note: See clause 2.7 for details.] [Note: Open source software is not included within the definition of Third Party Component.]	No Third Party Components.

Box 5 Extension of Period to Notice to Renew Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Licence Period (clause 2.6(a))	
If the Licence is not perpetual, then specify the number of days written notice prior to the end of each current Licence Period that the Contractor must give of the Price, payment arrangements and/or terms for any extended Licence Period or new Licence Period that is to commence immediately after the end of the current Licence Period. If no period is specified in this Box, the period is 30 days.	Not applicable. The Licence is a perpetual license.

Box 6 Installation

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Installation (clause 3.1)	

Specify if the Contractor is responsible to install the Licensed Software.	a) The Contractor is responsible for the installation of the Licensed Software in the SAT environment. b) The Systems Integrator (as defined in the Additional Conditions) is responsible for the installation of Licensed Software in all other Customer Environments; and c) the Customer is responsible for the installation of the Licensed Software in the Production Environment
If the Contractor is responsible for installation of the Licensed Software: (a) specify the details of the Installation and the date of installation; and	As specified in the PIPP.
(b) specify the Price for the installation, and when the Price is due.	The Price for installation is incorporated in the Contract Price.
Installation (clause 3.3)	
Specify the date by which the access codes must be made available, if applicable. If a date is not specified, the access codes must be provided promptly following the date the Parties enter into the Customer Contract.	The access codes for the Licensed Software were delivered to the Customer prior to the Commencement Date. If any further access codes are required by the Customer, these will be provided by the Contractor to the Customer on request.

Box 7 First Release

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
First Release (clause 3.9)	
Specify if the Licensed Software or any New Release will be a First Release. If so, specify the any additional terms and conditions that apply to the First Release. If this Box is not completed, the Licensed Software and each New Release is deemed not to be a First Release.	Not Applicable.

Box 8 Right to Receive Updates and/or New Releases

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Updates and New Release (clause 4.1)	
Specify if the Contractor provides the Customer the rights to receive: (a) Updates; (b) and/or New Releases, as part of the Licence (as opposed to part of a separate Software Support Service under Module 5).	Updates and New Releases will be covered by a separate support contract to be negotiated between the Parties.
Updates and New Release (clause 4.4(c))	
Specify the increased Licence Price when the Customer accepts the Update or New Release. If an increased Price is not specified, the Licence Price must not be increased for any Update or New Release provided during the Licence Period.	Not Applicable. There will not be any increase in the Licence Price for Updates or New Releases of the Licensed Software listed in Box 2 of this Module. If the Customer requires a module that is not included in Box 2, these further modules would be subject to an additional cost subject to further negotiations. However, if the Customer requests new functionality from the Contractor a change in the Licence Price may apply but only to the extent agreed by both Parties in writing and in advance. After the Go-Live date (as specified in the PIPP), in order for the Customer to receive New Releases, a Support and Maintenance Contract must be active.

Box 9 Warranties for Open Source Code

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Open Source Software (clause 5.2(b))	
If the software is Open Source Software: (a) specify the Open Source Licence that governs the use of the open source software; (b) specify whether the open source software is provided with the warranties that the Contractor provides in respect of Licensed Software, or whether the Contractor provides the open source software without any warranty (to the extent permitted by	Open Source Software will be licensed on the terms (including as to warranties) set out in the Additional Conditions.

law)	

Box 10 Ancillary Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Training (clause 6.1)	
Specify if training services are to be provided.	The Contractor must provide system administrator training and application administrator trainings during the Contract Period in order to enable the Customer's Personnel to configure the Licensed Software. Further detail in relation to the training services to be provided by the Contractor is set out in the PIPP.
If so, specify details, dates and the Prices of the training services, and when payment is due.	The training services are described in the PIPP. The Price for the training service is included in the Contract Price.
Other Services (clause 6.2)	
Specify the details, times, Prices for ad hoc issue resolution or support service for the Licensed Software, and when payment is due. [Note: If Software Support Services are being provided for the Licensed Software under Module 5, do not complete this Box.]	Not Applicable.

Box 11 Business Models of the Reseller

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Reseller Provision of Licensed Software (clause 7.1)	
Are any of the Deliverables being provided by the Contractor in the capacity as a Reseller? If yes: (a) specify if the Licensed Software is supplied by the Contractor who is acting as	Not Applicable.

Reseller as Facilitator. [Note: Reseller as Facilitator means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(a).] **OR**	
(b) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller with Pass Through Warranties. [Note: Reseller with Pass Through Warranties means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(b).]	

Box 12 Value Add Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Acquisition through a Reseller (clause 7.3)	
Specify if the details of any value add services the Contractor is to provide, the Prices and when payment is due.	Not Applicable.

Box 13 Customer Maintains Records

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Records (clause 10.1(a))	
Specify if and, if so, how the Customer must maintain records as to the locations of all copies of the Licensed Software and the usage of the Licensed Software.	Not Applicable.
Records (clause 10.1(b))	
Specify the frequency that the Customer provides copies of the records under clause 10.1(a). If this Box is not completed the Customer must provide copies of the records ever	Not Applicable.

six months.	

MODULE ORDER FORM

MODULE 7 – PROFESSIONAL SERVICES

Box 1 Details of Professional Services

Details to be included from Module 7	Order Details agreed by the Contractor and the Customer
Scope (clause 3.1)	
Specify the Professional Services (other than Training Services) which are to be provided, including: (a) the Contract Period; (b) the details of the Professional Services that the Contractor is to provide; (c) the details of any Specified Personnel; (d) the details of any Deliverables and their Contract Specifications; (e) the location of where the Professional Services are to be provided; (f) whether any Deliverable must undergo an Acceptance Test; (g) the Price, expenses and any other charges that apply in respect of the Professional Services; and (h) how the Prices, expenses and charges will be paid, including any Payment Milestones and whether the Professional Services are provided on a time and materials basis or some other basis. [Note: These details can be put on a PIPP instead of being including on this Module Order Form. If the details are put on a PIPP, insert "Details of the Professional Services (other than Training Services) are set out in the PIPP".]	(a) Contract Period – as set out in Item 10 of the General Order Form. (b) Professional Services – details of the Professional Services (other than Training Services) are set out in the PIPP. (c) Specified Personnel – as set out in the PIPP. (d) Deliverables and Contract Specifications – as set out in the PIPP. (e) Location – as set out in the PIPP. (f) Acceptance Testing – as set out in Item 32 of the General Order Form. (g) Price, expenses and charges – as set out in the PIPP. (h) Payment terms – as set out in Item 14 of the General Order Form and the PIPP.

Box 2 Requirement for a PIPP

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Project Implementation and payment Plan (PIPP) (clause 3.3)	
Specify if the Contractor is required to provide a PIPP, if no PIPP is attached to this Customer Contract at the Commencement Date. [If this Box is not completed, the Contractor is not required to provide a PIPP.]	Yes. A PIPP is required and attached to this Customer Contract

MODULE ORDER FORM
MODULE 8 –TRAINING SERVICES

Box 1 Details of Training Services

Details to be included from Module 8	Order Details agreed by the Contractor and the Customer
Scope (clause 3.1)	
Specify the Training Services which are to be provided, including: (a) the Contract Period; (b) whether the training is: (i) User Training - training to be provided to users of Deliverables to enable them to develop the requisite skills to use Deliverables; (ii) Train-the-Trainer Training – training to be provided to the Customer's nominated trainers who will provide user training in the future; and (iii) Awareness Training – training to be provided to the Customer's Personnel who are affected by the Deliverables and therefore need to be aware of: (A) how the Deliverables work; (B) their roles, if any; and (C) how they benefit from the changes; (c) a description of the Training Service, including the: (i) name of the course; (ii) course content overview; (iii) any pre-requisites for course attendees; (iv) number of attendees per course; (v) the cancellation arrangements for non-attendance at any training course, including notice	Refer to the PIPP

arrangements, arrangements for substitutions and cancellation fees;

(vi) how the Training Services will be delivered;

(d) whether the Training Services will be provided at the Customer's premises;

(e) the items that the Party that is providing the premises for the Training Services is responsible for providing and ensuring that they are set up and/or otherwise made available for the training, including:

(i) the venue, furniture, projectors, flip carts, pens, pencils and other presentation equipment for the trainer and the attendees;

(ii) refreshments and catering for the trainer and the attendees;

(iii) any hardware, software and technical infrastructure needed for the trainer and each attendee;

(iv) who is to pay the costs associated with any of these items;

(f) the details of any the presentation materials and any handouts for the attendees, and who is to provide them;

(g) where "Train the Trainer" services are to be provided, the qualifications and competencies that each of the Customer's trainers must have in order to deliver a training course using the training materials;

(h) where the Contractor is providing training materials, the license that the Contractor provides to the Customer relating to the use of the training materials and the Price and payment arrangements for that license.

[Note: If this item within the Box is not completed then:

(i) the Contractor grants the Customer and its Personnel a non-exclusive, licence to permit each attendee of the training course to use the training materials for the benefit of the Customer;

(ii) where "Train the Trainer" services are to be provided, the Contractor also grants the Customer a non-exclusive licence to: (A) allow the Customer's Personnel who have the agreed qualifications and competencies to train other Customer Personnel, to copy and use the "trainer version" of the training materials to train other Customer Personnel during the Contract Period; (B) allow the Customer to copy the "student version" of the training materials and provide a copy of the student version of the training materials to each Customer Personnel who attend such training courses during the Contract Period] (i) the Price, expenses and any other charges that apply in respect of the Training Services; and (j) how the Prices, expenses and charges will be paid. [Note: These details can be put on a PIPP instead of being including on this Module Order Form. If the details are put on a PIPP, insert "Details of the Training Services are set out in the PIPP".]	

Box 2 Requirement for a PIPP

Details to be included from Module 8	Order Details agreed by the Contractor and the Customer
Project Implementation and Payment Plan (PIPP) (clause 3.2)	
Specify if the Contractor is required to provide a PIPP, if no PIPP is attached to this Customer Contract at the Commencement Date. [If this Box is not completed, the Contractor is not required	Refer to the PIPP

to provide a PIPP.]	

MODULE ORDER FORM
MODULE 9 – DATA MIGRATION

Box 1 Data Extraction

Details to be included from Module 9	Order Details agreed by the Contractor and the Customer
Scope (clause 3.2)	
Specify the details of the obligations to extract the Customer Provided Data, including: (a) if the Contractor is responsible for extracting the Customer Provided Data from the Customer's system; (b) the format that the data must be provided to the Contractor; (c) the dates by which it must be provided (d) any other requirements.	The Contractors scope of work for data extraction is defined in the PIPP

Box 2 Terms and Conditions of License

Details to be included from Module 9	Order Details agreed by the Contractor and the Customer
Contractor's Licensed Software and Tools (clause 3.6(a))	
Specify if the Contractor agrees to make a License available to the Customer on the Licensed Software, software tools, object libraries or other items after the end of the Contract Period.	Not Applicable
If yes, for any software, tools etc that are *to be provided to the Customer* specify the terms and conditions of the license and the Prices of the License which is provided to the Customer. Any standard off the shelf software should be licensed under Module 3.]	
Contractor's Licensed Software and Tools (clause 3.6(b))	
If yes, *for any software, tools etc that are to be used by the Contractor (but not licensed to Customer)* specify the terms and conditions of	

use of the software, tools etc and the Prices, including the date when payment is due.	

Box 3 Data Cleansing Service

Details to be included from Module 9	Order Details agreed by the Contractor and the Customer
Data Cleansing (clause 4.1)	
If the Data Cleansing Service is to be provided, specify how to process the Customer Provided Data and level of accuracy and consistency of the processed data that the Contractor must meet. The modifications to the Customer Provided Data may include: (a) eliminating records that appear to be duplicates; (b) correcting obvious misspellings and errors; (c) ensuring that there are consistent descriptions, punctuation and syntax; and (d) resolving any other obvious inaccuracy, omission or inconsistency issues. [Note: Quality measurements may be included.]	The Contractors scope of work for Data Cleaning is defined in the PIPP.

Box 4 Data Analysis Service

Details to be included from Module 9	Order Details agreed by the Contractor and the Customer
Data Analysis (clause 5.1)	
If the Data Analysis Service is to be provided, specify: (a) the analysis tasks; (b) any Deliverables; (c) any report, that is to be to be provided.	The Contractors scope of work for Data Analysis is defined in the PIPP.

Box 5 Data Conversion and Migration Service

Details to be included from Module 9	Order Details agreed by the Contractor and the Customer
Data Conversion and Migration (clause 6.1)	
If the Data Conversion and Migration Service is to be provided, specify the tasks and Deliverables. The Service may include: (a) implementation of all activities set out in the PIPP for the conversion and migration of the Customer Provided Data; and (b) any other items.	Not Applicable

Box 6 Verification with Original Source

Details to be included from Module 9	Order Details agreed by the Contractor and the Customer
Exceptions (clause 9.3)	
Specify if the Contractor is required to verify each data item with the original source. For example is required to confirm the spelling of a person's name with that person. [If this Box is not completed, the Contractor is not obliged to verify any data with the original source of that data.]	The Contractor is responsible for verifying data with the Original source. The original source shall be the data as cleansed by the Systems Integrator and Customer and configured to work with the Licensed Software. For the avoidance of doubt, verifying data with original source means ensuring the data is not corrupted by the Licensed Software taking that data as an input from the original source and its subsequent output by the Licensed Software.

ANNEXURE A TO THE GENERAL ORDER FORM ADDITIONAL CONDITIONS

PART A: SPECIFIC VARIATIONS TO PROCUREIT

1. Specific Variations to Part 2 of ProcureIT: Customer Contract

1.1 On and from the Commencement Date, Part 2 of ProcureIT Version 3.1 'Customer Contract' is varied as follows:

(a) clause 2.4 is deleted and replaced with the following:

'***2.4*** *The Customer Contract commences on the Commencement Date and will expire at the end of the Contract Period stated in Item 10 of the General Order Form.* '

(b) clause 6.34(d) is deleted and replaced with the following:

'*and if the Contractor has not remedied that Substantial Breach (by completing the LD Obligation) by the end of such period, the Customer may give the Contractor a Termination Notice for the Customer Contract.*'

(c) clause 10.4 is deleted and replaced with the following:

'***10.4*** *To the extent that:*

(a) Acceptance Test Data is required for the Contractor to complete the Acceptance Tests; and

(b) the provision of that Acceptance Test Data is specified as the Customer's responsibility in the Order Documents or the documents setting out the Acceptance Tests,

the Customer must provide that Acceptance Test Data to the Contractor:

(c) at the times specified in the Order Documents or the documents that set out the Acceptance Tests; or

(d) if no times are specified in those documents, at least 14 Business Days prior to the date on which the Acceptance Test Period for the applicable Acceptance Tests commences.';

(d) clause 10.11(b) is deleted and replaced with '*not used.*';

(e) in clause 10.13(a) the following is inserted before ';':

'and does not remedy that failure within 14 days after receiving a notice from the Contractor specifying:

(i) the failure and the Deliverables to which it relates; and

(ii) that the Deliverable will be deemed to be accepted if that failure is not remedied';

(f) clause 10.13(e) is deleted and replaced with '*not used*.';

(g) in clause 13.4 the words 'On the AAD of a' are deleted and replaced with '*For each*';

(h) a new clause 13.5A is inserted as follows:

'***13.5A*** *The Contractor also grants the additional rights for New Material specified in the Additional Conditions.*'

(i) in clause 13.6 the words 'On the AAD of a' are deleted and replaced with '*For each*';

(j) in clause 13.7 the words 'On the AAD of a' are deleted and replaced with '*For each*';

(k) a new clause 13.8A is inserted as follows:

'***13.8A*** *The licences granted under clauses 13.6(c), 13.6(d), 13.7 and 13.8 are perpetual and irrevocable.*'

(l) in clause 13.10 the word 'AAD' is deleted and replaced with 'creation';

(m) clause 13.13 is deleted and replaced with '*Not used*';

(n) in clause 18.4, the words 'Notwithstanding any other clause in the Customer Contract,' are deleted and replaced with '*Subject to the exceptions set out in clause 18.5 and any other exceptions set out in the Additional Conditions,*' and the following words are added to the end of the clause '*For the avoidance of doubt, this clause does not apply in respect of any liquidated damages agreed under clauses 6.28 to 6.34*';

(o) clause 18.5(e) is moved to a new clause 18.5(f) and the following words are included in clause 18.5(e) '*the Contractor's abandonment of its obligations under this Customer Contract; or*';

(p) clause 19.5(a) is deleted and replaced with '*not used*';

(q) in clause 19.8, the references to clause '18.4,' are deleted;

(r) in clause 25.2 the preamble is deleted and replaced with the following:

'***25.2*** *The Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent it relates to one or more Deliverables if:*';

(s) in clause 25.3 the first sentence is deleted and replaced with the following:

'*The Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent it relates to one or more Deliverables for convenience at any time.*'

(t) the following words are inserted at the beginning of clause 25.4(a), 'if the Order Documents do not state an amount that is payable on termination,';

(u) in clause 25.4(a) the words '; and' are deleted and replaced with '*; or*';

(v) in clause 25.6 the preamble is deleted and replaced with the following:

'**25.6** *The Contractor may give the Customer a Termination Notice for the Customer Contract in its entirety if the Customer:*';

(w) a new clause 25.6A is inserted under the heading 'Consequences of Termination' as follows:

'***25.6A*** *If a Termination Notice is given for the Customer Contract in its entirety or to the extent that it relates to one or more Deliverables, the termination will be effective on, and the component of the Customer Contract the subject of the Termination Notice will terminate on, the date on which the Transition Out Period ends.*'; and

(x) in clause 26.15 the reference to clause '13.8' is deleted and replaced with '*13.8A*'.

2. Specific Variations to Part 3 of ProcureIT: Dictionary

2.1 On and from the Commencement Date, Part 3 of ProcureIT Version 3.1 'Dictionary' is varied as follows:

(a) a new clause 1.10A is inserted as follows:

'***1.10A*** ***Application*** means each of the following:

(a) DTTS;

(a) IMS; and

(b) CIMS,

as the context requires.';

(b) a new clause 1.18A is inserted as follows:

'***1.18A*** ***CIMS*** *means the customer information management system described in the PIPP;*

(c) a new clause 1.34A is inserted as follows:

'***1.34A*** ***Go Live*** *has the meaning given to that term in the PIPP.*';

(d) a new clause 1.39A is inserted as follows:

'***1.39A*** ***DTTS*** *means the day of operations timetable system as described in the PIPP*';

(e) a new clause 1.57A is inserted as follows:

'***1.57A*** ***IMS*** *means the incident management system described in the PIPP.*'

(f) a new clause 1.57B is inserted as follows:

'***1.57B*** ***Incident*** *has the meaning given to that term in the Service Level Agreement set out in Annexure C to the General Order Form.*';

(g) clause 1.73 is deleted and replaced with the following:

'***1.73*** ***Non-Recurring Services*** *means the Services described in the PIPP.*';

(h) a new clause 1.90A is inserted as follows:

'**1.90A** **Release 1** has the meaning given to it in the PIPP.'

(i) a new clause 1.90B is inserted as follows:

'**1.90B Release 3** has the meaning given to it in the PIPP.'

(j) a new clause 1.94A is inserted as follows:

'***1.94A*** ***Service Credits*** *has the meaning given to that term in the Service Level Agreement set out in Annexure C to the General Order Form.';*

(k) clause 1.101 is deleted and replaced with the following:

'***1.101*** ***Stage*** *means a stage or phase described in the PIPP.*';

(l) clause 1.104 is deleted and replaced with:

'***1.104*** ***Statutory Requirements*** *means any statute, regulation, by-law, ordinance or subordinate legislation in force from time to time in any relevant jurisdiction and includes industry codes of conduct.*';

(m) a new clause 1.106A is inserted as follows:

'***1.106A*** ***System*** *means the system consisting of DTTS, IMS and CIMS as described in the PIPP and includes all Developed Software and all Updates and New Releases of those items'*;

(n) a new clause 1.110A is inserted as follows:

'***1.110A*** ***Termination Notice*** *means a Notice in Writing given accordance with the Customer Contract or pursuant to a common law right terminating the Customer Contract in its entirety or to the extent it relates to one or more Deliverables.';*

(o) a new clause 1.110D is inserted as follows:

'***1.110D*** ***Transition Out Period*** *has the meaning given to that term in Part B of the Additional Conditions set out in Annexure D to the General Order Form.*';

(p) clause 1.113 is deleted and replaced with the following:

'***1.113*** ***Warranty Period*** *means:*

(a) for Deliverables relating to Release 1, the period commencing on the AAD for that Deliverable and ending on the date which is 12 months after Go Live for Release 1 occurs;

(b) for Deliverables relating to Release 3, the period commencing on the AAD for that Deliverable and ending on the date which is 12 months after Go Live for Release 3 occurs; and

(c) for all other Deliverables, the period commencing on the AAD for that Deliverable and ending on the date which is 12 months after that date.'; and

(q) in clause 1.114 the word '*Defect'* is deleted and replaced with *'Incident'*.

3. Specific Variations to Module 3 – Licensed Software

3.1 On and from the Commencement Date, Module 3 of ProcureIT Version 3.1 'Licensed Software' is varied as follows:

(a) clause 2.1 is deleted and replaced with the following:

'***2.1*** *The Contractor grants to the Customer a non-exclusive License to exercise the rights specified in the Class of License stated in the Module Order Form in relation to the Licensed Software.*';

(b) a new clause 2.1A is inserted as follows:

'***2.1A*** *If the Module Order Form specifies that the Licensed Software may only be used on Designated Equipment, the Customer must only use that Licensed Software on that Designated Equipment.*';

(c) clauses 5.1 and 5.2 are deleted and replaced with the following:

'***5.1*** *Subject to this clause 5:*

(i) *nothing in this Customer Contract overrides the terms of any Open Source Licence; and*

(ii) *any open source code contained in a Deliverable is available only under the terms of the relevant Open Source Licence.*

*'**5.2*** *To the extent that any open source code is associated with any Licensed Software, the following overrides the terms of any Open Source Licence:*

(i) *the Contractor must ensure that the scope of the licence granted for the open source code under any applicable Open Source Licence is at least as broad as the licences granted for other Licensed Software and Existing Material under this Customer Contract, provided that such open source code is used in accordance with the licence terms contained in this Customer Contract;*

(ii) *the Contractor must ensure that there are no restrictions, obligations or terms that are more onerous on the Customer than, or inconsistent with, the restrictions, obligations or terms set out in this Customer Contract, including any obligations in the Open Source Licences relating to assignment of intellectual property rights in changes to the open source code or the disclosure of changes to the open source code;*

(iii) *the Customer provides indemnities and warranties relating to Intellectual Property Rights infringement claims for open source code that are equivalent to the indemnities and warranties in this Customer Contract for other Licensed Software and Existing Material;*

(iv) *all warranties under the Customer Contract apply to the open source code and the Contractor is obliged to remedy defects in, or replace that open source code if necessary, on the same terms as other Licensed Software and Existing Material; and*

(v) *the Contractor must not incorporate open source code in the Deliverables unless the Customer provides its written approval.*

(d) in clause 8.1 the words 'when operating on the Designated Equipment' are deleted;

(e) in clause 8.2 the words ', *subject to clauses 8.1, 8.3 and 8.4,*' are inserted after the words 'of the subject matter';

(f) clause 8.2(c) and 8.2(e) are deleted and replaced with '*not used*';

(g) in clause 8.2(d) the words 'for the Designated System' are deleted and replaced with '*for the Designated Equipment or as specified in the Contract Specifications*'; and

(h) in clause 9.1(d) is deleted and replaced with the following:

'*(d) any Virus, denial of service attack or other malicious act that adversely affects all or part of the Licensed Software except to the extent that the Virus, denial of service attack or other malicious act:*

(i) was introduced or carried out by the Contractor or any of its Personnel;

(ii) was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or

(iii) was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;'.

4. Specific Variations to Module 5 – Software Support Services

4.1 On and from the Commencement Date, Module 5 of ProcureIT Version 3.1 'Software Support Services' is varied as follows:

(a) a new clause 1.10A is inserted as follows:

'***1.10A*** ***Resolve*** *has the meaning given to that term in the Service Level Agreement in Annexure C to the General Order Form.*';

(b) in clause 1.8, the word 'Defect' is deleted and replaced with the word '*Incident*';

(c) in clause 3.6:

(i) each reference to the word 'Defect' is deleted and replaced with the word '*Incident*'; and

(ii) the word 'remedy' is deleted and replaced with the word 'Resolve';

(d) in clause 3.7:

(i) the word 'remedy' is deleted and replaced with the word 'Resolve'; and

(ii) the word 'Defect' is deleted and replaced with the word 'Incident';

(e) in clause 3.8 each reference to the word 'Defect' is deleted and replaced with the word '*Incident*';

(f) in clause 3.9 the word 'Defects' is deleted and replaced with the word '*Incidents*';

(g) in clause 3.10 the words 'performance rebates stated in the Service Level Agreement' are deleted and replaced with '*Service Credits stated in the Service Level Agreement in Annexure C to the General Order Form.*'

(h) in clause 3.14 the words 'on termination and / or expiry of the Support Services, the Contractor must render any reasonable assistance to the Customer to the extent necessary to effect an orderly assumption by a replacement contractor of the

performance of the Contractor's obligations under the Customer Contract' are deleted and replaced with the following:

'*the Contractor must comply with its transition out obligations set out in the Additional Conditions.*';

(i) in clause 7.1(f) is deleted and replaced with the following:

'*(f) any Virus, denial of service attack or other malicious act that adversely affects all or part of the Supported Software except to the extent that the Virus, denial of service attack or other malicious act:*

(i) was introduced or carried out by the Contractor or any of its Personnel;

(ii) was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or

(iii) was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;'.

5. Specific Variations to Module 7 – Professional Services

5.1 On and from the Commencement Date, Module 7 of ProcureIT Version 3.1 'Professional Services' is varied as follows:

(a) clause 4 is deleted and replaced with '*Not used*':

(b) in clause 6.1(a) the words 'in all material respects during the Warranty Period' are deleted;

(c) in clause 6.1(b) the word 'may' is deleted and replaced with '*must*';

(d) clause 6.2(c), 6.2(e) and 6.2(g) are deleted and replace with '*Not used'* and clauses 6.2(c) to 6.2(g) are renumbered 6.2(a) to 6.2(e) respectively;

(e) in clause 6.2(d) the word '*or*' is inserted at the end of that clause;

(f) in clause 6.4:

(i) the words 'from the Commencement Date until the end of the Warranty Period in relation to the Professional Services that' are deleted; and

(ii) the words 'in all material respects' in the last line are deleted.

(g) in clause 7.1(e) is deleted and replaced with the following:

'*(e) any Virus, denial of service attack or other malicious act that adversely affects all or part of the Deliverables, except to the extent that the Virus, denial of service attack or other malicious act:*

(i) was introduced or carried out by the Contractor or any of its Personnel;

(ii) was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or

(iii) *was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;'.*

6. Specific Variations to Module 8 – Training Services

6.1 On and from the Commencement Date, Module 8 of ProcureIT Version 3.1 'Training Services' is varied as follows:

(a) clause 4 is deleted and replaced with '*Not used*':

(b) in clause 6.1(a) the words '*in all material respects during the Warranty Period'* are deleted;

(c) clauses 6.2(a) and 6.2(b) are deleted and replaced with '*not used'*;

(d) in clause 6.4 the words *'from the Commencement Date until the end of the Warranty Period in relation to the Training Services that'* are deleted; and

(e) clauses 7.1(a), 7.1(c), 7.1(d), 7.1(e) and 7.1(f) are deleted and replaced with '*not used*'.

7. Specific Variations to Module 9 – Data Migration

7.1 On and from the Commencement Date, Module 9 of ProcureIT Version 3.1 'Data Migration' is varied as follows:

(a) in clause 7.1(a) the words *'in all material respects during any applicable Warranty Period'* are deleted; and

(b) in clause 8.1(d) the words *'(except to the extent that the attack or malicious act is an attack or malicious act of the Contractor)*' are deleted and replaced with the following:

'*, except to the extent that the Virus, denial of service attack or other malicious act:*

(i) *was introduced or carried out by the Contractor or any of its Personnel;*

(ii) *was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or*

(iii) *was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;'.*

PART B: OTHER ADDITIONAL CONDITIONS

8. Definitions

8.1 In the Additional Conditions in this Part B:

Business Change means:

(a) any Divestiture; or

(b) any restructure, dissolution, merger, transfer of any or all of its assets, staff, and liabilities in respect of all or any part of the Customer's business or operations, or any

consolidation (including the performance of common functions) of the Customer or any part of the Customer, with any other entity.

Customer Data means:

(a) data, information and other materials provided to, or generated by, the Contractor relating to the Customer or any other Agency or any of their operations, facilities, customers, Personnel, assets and programs (**Raw Data**); and

(b) data, information and other materials in any format whatever generated, stored, processed, retrieved, printed or produced by or on behalf of the Contractor utilising the Raw Data.

Customer Environment means the combination of hardware, software, systems and network infrastructure and services used by the Customer from time to time.

Divestiture means any sale or divestiture of all or part of the Customer, its business or other assets, in whatever form (including by way of an initial public offering of shares).

Interfacing Contractor means a person who supplies goods, services or other inputs with whom the Contractor must interface or interact to supply the Deliverables or otherwise as part of completing the project described in the PIPP, and includes the Key Contractors.

Key Contractor means each of the following:

(a) Ajilon Australasia Pty Ltd;

(b) Thales Australia Limited;

(c) Quintiq Pty Ltd; and

(b) any other person specified as a 'key contractor' by the Customer from time to time.

Relevant Entity means any entity or organisation to which all or part of the Customer that is sold or divested, or with which the Customer is merged or consolidated as a result of a Divestiture.

RFP means the request for proposals titled 'No WS178494 Rail Operations Centre (ROC) Technology Solution' dated 7 July 2014.

ROC Technology Solution has the meaning given to it in the PIPP.

Transition Out means the transfer of responsibility for the supply of the Deliverables to the Customer or a third party designated by the Customer.

Transition Out Period has the meaning given to that term in clause 40.1 of these Additional Conditions.

Transition Services means any transition services that the Customer is required to supply relating to a Business Change.

8.2 All other capitalised terms in this Part B of these Additional Conditions have the meaning given to them in Part 3 of the Customer Contract.

9. Benefit of knowledge assets

9.1 The Contractor must do all things necessary to ensure that the Customer benefits from access to the Contractor's knowledge assets developed and captured through the Contractor's work globally, including by giving the Customer:

(a) the opportunity to attend and participate at all of the Contractor's strategic information technology and customer forums, including the Customers:

(i) customer advisory councils; and

(ii) research and development and other technical forums; and

(b) access to, and an ability to comment on, the Contractor's internal technology roadmaps showing new technologies that it or its Subcontractors are developing, emerging trends in the industry and its development concepts which have not yet been formalised as Future Commitments.

10. Compatibility and interoperability

10.1 The Contractor must ensure that:

(a) the Application that it supplies meets the requirements relating to compatibility and interoperability specified for that Application in the Contract Specifications;

(b) the Application that it supplies is compatible with, and is capable of being integrated and interoperating with, each other Application through either:

(i) standard interfaces; or

(ii) interfaces developed in accordance with standard industry practices and methodologies,

so that the System meets the requirements for the System set out in the Contract Specifications; and

(c) the Application that it supplies is compatible with, and is capable of being integrated and interoperating with, the Customer Environment:

(i) through either standard interfaces or interfaces developed in accordance with standard industry practices and methodologies; and

(ii) without causing any outage, interruption or degradation of any component of the Customer Environment.

11. Interfaces, methodologies and tools

INTERFACES

11.1 To the extent that the Contractor is required to design, develop and supply any interfaces between:

(a) IMS and the other Applications; or

(b) IMS and the Customer Environment,

the Contractor must design, develop and supply each interface:

(c) in a way that will enable the interface to accommodate subsequent Updates and New Releases of the software to which the interface relates (including Updates and New Releases for IMS); and

(d) so that those interfaces are capable of being used as the basis for interfaces between IMS and other software.

METHODOLGIES

11.2 The Contractor must supply the Deliverables in accordance with the methodologies specified in the PIPP.

TOOLS

11.3 The Contractor must:

(a) advise the Customer in writing of all software tools used in the performance of the Services where such tools are necessary for ongoing enhancement or maintenance of the Deliverables; and

(b) if requested to do so by the Customer, licence those software tools to the Customer on terms equivalent to the terms of the Customer Contract, or procure a licence for the Customer for those software tools.

12. Requirements

12.1 The Contractor must:

(a) ensure the Deliverables that it supplies under the Customer Contract are consistent with, and are based on the PIPP, and meet the Contract Specifications; and

(b) supply Deliverables for IMS which ensure that:

(i) IMS meets all of the requirements specified for that Application in the PIPP and the Contract Specifications;

(ii) IMS integrates and interoperates with each other Application so that the System meets the requirements for the System specified in the PIPP and the Contract Specifications; and

(iii) IMS integrates and interoperates with, the Customer Environment:

(A) as described in the PIPP and the Contract Specifications; and

(B) without causing any outage, interruption or degradation of any component of the Customer Environment; and

(c) design IMS in a manner that minimises the effort required to have the IMS modified or integrated with other software at a later date.

13. Approval of Documents

APPLICATION

13.1 The process in this clause 13 applies to all Deliverables that are Documents.

SUBMISSION

13.2 The Contractor must submit all Deliverables which are Documents for approval in accordance with this clause 13 by the applicable date for that Deliverable specified in the PIPP.

13.3 AAD for a Document will occur on the date on which that Document is approved in accordance with this clause 13.

APRROVAL

13.4 The Customer must, within 15 Business Days after a Document is submitted to the Customer (or any alternative timeframe agreed between the Parties in writing), review that Document and give the Contractor a Notice in Writing specifying that:

(a) the Document meets the Contract Specifications and the Customer approves the Deliverable; or

(b) the Document does not meet the Contract Specifications and the Customer requires amendments to the Document, in which case the Customer must specify those amendments in the Notice in Writing.

13.5 If the Customer gives the Contractor a Notice in Writing requiring amendments to a Document under clause 13.4(b) of these Additional Conditions, the Contractor must, within 5 Business Days (or any alternative timeframe agreed between the Parties in writing), prepare a revised version of the Document which addresses all of the amendments required by the Customer.

13.6 The Parties must repeat the process in this clause 13 until the Customer approves each Document in accordance with clause 13.4(a) of these Additional Conditions or the Customer gives the Contractor a Notice in Writing in accordance with clause 13.7 of these Additional Conditions.

TERMINATION

13.7 If the Customer gives a Notice in Writing under clause 13.4(b) of these Additional Conditions 3 or more times for a Document, the Customer may terminate the Customer Contract to the extent it relates to that Deliverable and any related or dependent Deliverables supplied or to be supplied under the Customer Contract, with immediate or later effect, by giving the Contractor a Notice in Writing.

REFUND

13.8 If the Customer exercises its right under clause 13.7 of these Additional Conditions, the Contractor must, within 10 Business Days after receiving the Notice in Writing, refund to the Customer all amounts paid by the Customer in connection with the component of the Customer Contract that has been terminated.

14. Background checks

CONTRACTOR CHECKS

14.1 If requested by the Customer, or otherwise required by a Customer policy specified in the Order Documents, the Contractor must:

(a) conduct background checks on the Contractor's Personnel in the performance of the Customer Contract as and when required by the Customer or as specified in the applicable Customer policy; and

(b) not use any Personnel in the performance of the Customer Contract who do not meet the requirements specified by the Customer (acting reasonably) from time to time, including in an applicable Customer policy, (**Customer Personnel Requirements**) unless otherwise directed by the Customer.

14.2 The Contractor must give the Customer the results of any background checks it conducts under clause 14.1 of these Additional Conditions within 2 Business Days of receipt.

CUSTOMER CHECKS

14.3 The Customer may at any time:

(a) carry out the background checks referred to in clause 14.1 of these Additional Conditions itself; and

(b) conduct such other investigations and background checks as the Customer considers appropriate,

(**Customer Checks**).

14.4 From time to time, the Customer may (acting reasonably) request assistance relating to the Customer Checks. The Contractor must provide all assistance relating to the Customer Checks requested by the Customer promptly after the Contractor receives that request.

14.5 If a Customer Check shows that a member of the Contractor Personnel does not meet the Customer Personnel Requirements, the Customer must advise the Contractor as soon as possible.

CONSENT

14.6 The Contractor must obtain all necessary consents from Contractor Personnel to enable:

(a) the Contractor and the Customer to conduct the checks or investigations under clauses 14.1 and 14.2 of these Additional Conditions; and

(b) the Contractor to provide the results of its checks or investigations to the Customer.

14.7 If the Contractor is unable to obtain a consent required under clause 14.6 of these Additional Conditions from a person, then, unless the Customer otherwise agrees in writing, the Contractor must:

(a) not engage that person to perform, or remove that person from performing, the Contractor's obligations under the Customer Contract; and

(b) provide a replacement for that person who is acceptable to the Customer within 2 Business Days after the date on which it became aware of that issue.

REMOVAL AND REPLACEMENT

14.8 If:

(a) a check performed by the Contractor or a Customer Check performed by the Customer shows that a member of the Contractor Personnel does not meet the Customer Personnel Requirements; and

(b) that person is engaging in the supply of the Deliverables or the performance of the Contractor's obligations under this Customer Contract,

(**Relevant Person**) the Contractor must immediately:

(a) remove that Relevant Person from the supply of the Deliverables or the performance of the Contractor's obligations under this Customer Contract; and

(b) withdraw and remove all access that the Relevant Person has to the Customer Data, Customer Supplied Items, Customer software or systems or the Sites.

14.9 If the Contractor is required to remove a Relevant Person in accordance with clause 14.8 of these Additional Conditions, the Contractor must replace that Relevant Person:

(a) with a member of the Contractor Personnel who meets the requirements for the Contractor's Personnel specified in the Customer Contract; and

(b) if the Relevant Person is one of the Specified Personnel, with a member of the Contractor Personnel who is approved by the Customer in accordance with clause 8.9 of Part 2 of the Customer Contract.

TERMINATION NOTICE

14.10 If the Contractor breaches this clause 14, the Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent it relates to one or more Deliverables with immediate or later effect.

15. Personnel

SKILLS, EXPERIENCE

15.1 The Contractor must:

(a) only use Personnel who:

(i) are suitably qualified, skilled and experienced to supply the Deliverables; and

(ii) have received training on the applicable requirements for supplying the Deliverables, including compliance with all applicable Customer policies; and

(b) ensure that all Contractor Personnel involved in the supply of the Deliverables are fluent in, and communicate with the Customer in, English.

REPLACEMENT PERSONNEL

15.2 The Customer (acting reasonably) may at any time request the Contractor to replace any member of the Contractor Personnel stating the reasons for the requirement.

15.3 If the Customer makes a request under clause 15.2 of these Additional Conditions, the following procedure will apply:

(a) if the reason for the request is due to:

(i) a contravention of a Statutory Requirement, another law or a Customer policy by that member of the Contractor Personnel;

(ii) a breach of the work health and safety obligations or other act or omission by that member of the Contractor Personnel that endangered the health or safety of any person on a premises, Site, facility or other location owned, leased or operated by the Customer; or

(iii) serious misconduct by that member of the Contractor Personnel,

the Contractor must immediately remove that member of the Contractor Personnel from the supply of the Deliverables or the performance of the Contractor's obligations under this Customer Contract;

(b) for any other reason, the Contractor must:

(i) promptly meet with the Customer and discuss its concerns; and

(ii) if, after those discussions, the Contractor cannot demonstrate to the Customer's satisfaction (acting reasonably) that it is able to address the Customer's concerns in a reasonable timeframe, replace that member of the Contractor Personnel; and

(c) if the Contractor is required to replace a member of the Contractor Personnel in accordance with this clause 15.3 it must ensure that:

(i) where that replacement relates to Specified Personnel, the person is approved by the Customer in accordance with clause 8.9 of Part 2 of the Customer Contract;

(ii) to the extent possible, there is a sufficient handover between the original member of the Contractor Personnel and the replacement so that the replacement is fully aware of the Deliverables and the Customer's requirements in connection with the Customer Contract (at no cost to the Customer); and

(iii) it withdraws and removes all access that the member of the Contractor Personnel being replaced has to the Customer Data, CSI, Customer software or systems or the Sites on the date on which that member of the Contractor Personnel was removed.

15.4 If the Contractor:

(a) breaches clause 15.3(a) of these Additional Conditions, the Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Termination Notice;

(b) breaches clause 15.3(b) or 15.3(c) of these Additional Conditions and has not remedied the breach within 10 Business Days of receipt of a notice from the Customer specifying the breach and requiring the breach to be remedied, the Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Termination Notice.

16. Sites

16.1 The Contractor must supply the Deliverables to or at the sites specified in the PIPP. Each of these sites will be a 'Site' for the purposes of the Customer Contract.

17. Restrictions relating to locations of performance

17.1 The Contractor must not:

(a) supply any of the Deliverables from or at; or

(b) store, access, send, transfer or make accessible, any of the Customer Data at, to or from,

a location outside of New South Wales unless:

(a) that location is specified in the PIPP; or

(b) the Contractor has the prior written consent of the Customer (such consent not to be unreasonably withheld).

17.2 If the Customer provides the Contractor with consent under clause 17.1 of these Additional Conditions, the Contractor must comply with any conditions imposed by the Customer.

18. Service warranties

18.1 In addition to any other obligations of the Contractor under the Customer Contract, the Contractor warrants and represents that:

(a) all Deliverables which are Services will be supplied in a safe and efficient manner and to the best of the Contractor's skill and knowledge; and

(b) it has the necessary knowledge and resources to supply the Deliverables.

19. Fitness for purpose

19.1 In addition to any other Contract Specifications set out in the Customer Contract, the Contractor must ensure that each Deliverable is fit for the purposes for which it was supplied, including any purposes specified in the PIPP.

20. Governance

20.1 Each Party must comply with the governance procedures specified in the PIPP, for the Deliverables described in the PIPP.

21. Multi-sourcing and co-operation

21.1 The Contractor, must establish relationships and arrangements with all other Interfacing Contractors through which they:

(a) work together;

(b) co-ordinate their activities;

(c) co-operate fully and comprehensively with each other;

(d) interface their operations in a manner which is seamless;

(e) integrate the services they each supply;

(f) establish integrated processes which preserve their responsibility for the services they supply and ensure delivery of service level requirements; and

(g) agree the scope of obligations and interactions needed to minimise the need for the Authority to be involved in resolving service problems or managing their relationship,

(**Integration Outcomes**).

21.2 The Customer will appoint:

(a) a system integrator who is primarily responsible for integrating the Applications and the System and the Deliverables supplied by the Contractor and other Interfacing Contractors (**System Integrator**); and

(b) the System Integrator as its agent to manage the Customer Contract and the Contractor's performance.

21.3 The Customer may change the System Integrator from time to time by giving the Contractor a Notice in Writing. If the Customer does so:

(a) the old System Integrator will cease to become the System Integrator for the purposes of the Customer Contract; and

(b) the person specified as the 'system integrator' in the notice will become the System Integrator for the purposes of the Customer Contract,

on and from the date of the Notice in Writing.

21.4 The Contractor must:

(a) interact with the System Integrator; and

(b) treat and comply with, any request, notice, direction or instruction given by the System Integrator relating to the Customer Contract which is in the scope of the appointment,

as if it were the Customer.

21.5 The Contractor must:

(a) provide the Customer and each Interfacing Contractor (as applicable) all co-operation and assistance requested by the Customer or an Interfacing Contractor (as applicable), including by:

(i) working with the Customer and Interfacing Contractors to facilitate the discharge of end-to-end service obligations and the meeting or exceeding of end-to-end service levels; and

(ii) providing the Customer and each Interfacing Contractor with access to materials and other resources; and

(b) do all other things necessary,

to achieve the Integration Outcomes and to ensure that all services and deliverables (including the Deliverables) supplied to the Customer by the Contractor and each Interfacing Contractor, are supplied in a coordinated, effective and timely manner.

21.6 The Contractor must supply the Deliverables in a manner which allows the System Integrator to discharge its role under its contract with the Customer.

21.7 If directed by the Customer, the Contractor must supply the Deliverables to the System Integrator.

21.8 The Contractor:

(a) acknowledges and agrees that any disputes between the Contractor and an Interfacing Contractor (**IC Disputes**) are to be resolved as far as possible without the need for the Customer's intervention; and

(b) an IC Dispute must be reported to, and escalated to, the Customer in accordance with the process set out in the PIPP if it continues for more than 5 Business Days.

21.9 During the course of any IC Dispute, the Contractor must continue working with the Interfacing Contractors to maintain continuity of the Deliverables and the services and deliverables supplied by the Interfacing Contractor, regardless of responsibility.

22. Customer Supplied Items

22.1 The Contractor must:

(a) comply with the terms of all contracts with a third party relating to Customer Supplied Items (each a **CSI Contract**) that have been notified to the Contractor by the Customer in writing;

(b) not do, or fail to do, anything that would cause the Customer (or any other Agency) to breach the terms of a CSI Contract, or otherwise incur any liability under, a CSI Contract that has been notified to the Contractor pursuant to clause 22.1(a); and

(c) comply with all of the Customer's policies and procedures that apply to the Customer Supplied Items, as updated by the Customer from time to time.

23. Business Change

RIGHTS

23.1 The Contractor acknowledges and agrees that the Customer may by giving notice to the Contractor:

(a) use the Deliverables (including for the benefit of a Relevant Entity);

(b) sublicense or permit one or more persons to use any of the Deliverables;

(c) assign some or all of its rights under the Customer Contract to one or more persons;

(d) novate all or part of the Customer Contract to one or more persons; or

(e) require the Customer to supply one or more of the Deliverables directly to any other Relevant Entity,

for the purposes of facilitating or implementing a Business Change.

23.2 The Contractor consents to any novation or assignment notified to the Contractor in accordance with clause 23.1 of these Additional Conditions

CONTRACTOR FACILITATION

23.3 The Contractor must, on request by the Customer, do all things reasonably necessary:

(a) to facilitate a Business Change; and

(b) to give effect to or implement any of the arrangements contemplated in clause 23.2 (including promptly executing all necessary documents and granting all necessary rights).

23.4 Any assistance required by the Customer from the Contractor in connection with a Business Change in addition to the Contractor's obligations in clause 23.3 will be subject to the Parties agreeing a Change Request.

DISCLOSURE

23.5 In addition to any other rights that the Customer has under the Customer Contract, the Customer may disclose the terms of the Customer Contract and any Confidential Information of the Contractor:

(a) to any department or office of the State of New South Wales or other Agency;

(b) to any Relevant Entity or proposed Relevant Entity; or

(c) to any adviser or personnel of any such person specified in clauses 23.5(a) or 23.5(b) of these Additional Conditions.

24. Audit

APPLICATION AND INTERPRETATION

24.1 The right to conduct an audit under this clause 24 of these Additional Conditions is in addition to, and does not derogate from any other audit or inspection rights that the Customer may have under the Customer Contract.

RECORD KEEPING

24.2 The Contractor must maintain the records referred to in clause 23.4 of Part 2 of the Customer Contract until the date which is seven years after the Customer Contract expires or is terminated.

RIGHT TO AUDIT

24.3 The Customer may, at any time during the Contract Period or the period which is seven years after the Customer Contract expires or is terminated, conduct an audit for one or more of the following purposes:

(a) to assess the Contractor's performance and compliance with the Customer Contract;

(b) to assess the accuracy of the invoices given by the Contractor under the Customer Contract;

(c) to assess the Contractor's quality management system;

(d) to assess the Contractor's work health and safety system;

(e) to assess competencies of the Contractor's Personnel, applicable licences and certifications and other relevant factors; or

(f) to otherwise meet any applicable contractual, regulatory, governmental or management requirements,

by giving a Notice in Writing (**Audit Notice**) to the Contractor a reasonable time prior to the date on which the audit will commence.

24.4 If the Customer gives the Contractor an Audit Notice, the Contractor must give the Customer and its Personnel (including external auditors):

(a) full access:

(i) to all sites, facilities and other resources (including Personnel) used by the Contractor or its Personnel to perform its obligations under the Customer Contract; and

(ii) to all of the records maintained under clause 23.4 of Part 2 of the Customer Contract and other information relating to the Customer Contract (whether located in Australia or elsewhere); and

(b) all assistance reasonably required by the Customer and its Personnel to conduct the audit.

COPIES OF RECORDS AND INFORMATION

24.5 The Customer may take copies of any records or other information it reviews as part of an audit.

COSTS

24.6 Each Party will be responsible for its own costs of exercising its right under, or complying with, this clause 24 of these Additional Conditions.

SURVIVAL

24.7 This clause 24 of these Additional Conditions survives termination or expiry of the Customer Contract.

25. Inspections

APPLICATION AND INTERPRETATION

25.1 The right to conduct an inspection under this clause 25 of these Additional Conditions is in addition to, and does not derogate from any other audit or inspection rights that the Customer may have under the Customer Contract.

INSPECTIONS

25.2 The Customer may, at any time during the Contract Period:

(a) inspect the sites, facilities or other resources used by the Contractor or its Personnel to supply the Deliverables; or

(b) attend the Contractor's or any of its Personnel's sites or facilities used to supply the Deliverables and observe the supply of the Deliverables,

by giving the Contractor a Notice in Writing (**Inspection Notice**) to the Contractor a reasonable time prior to the date on which the inspection will commence.

25.3 If the Customer gives the Contractor an Inspection Notice, the Contractor must give the Customer and its Personnel:

(a) access to its, or its Personnel's, sites, facilities and other resources specified in the Inspection Notice; and

(b) all assistance reasonably required by the Customer and its Personnel to conduct the inspection.

COSTS

25.4 Each Party will be responsible for its own costs of exercising its right under, or complying with, this clause 25 of these Additional Conditions.

26. Engagement and RFP

THE RFP

26.1 The Contractor acknowledges and agrees that:

(a) the RFP was for the design, implementation and support of the System;

(b) the Contractor submitted a response to the RFP relating to IMS;

(c) despite the Parties entering into this Customer Contract for the Deliverables described in the PIPP, the Customer has not yet completed or awarded other components of the RFP (**Other RFP Components**); and

(d) nothing in the Customer Contract affects, or makes any representation relating to, the Other RFP Components and the Customer may award part or all of the Other RFP Components to the Contractor, any other person or any combination of them.

26.2 The Customer excludes any and all liability to the Contractor relating to the outcome of the RFP (including if the RFP is awarded to another person).

26.3 The Contractor releases the Customer from any and all claims that the Contractor may have against the Customer relating to the RFP. The Customer may plead this clause 26.3 in bar to any proceedings commenced by the Contractor relating to the RFP.

SUPPORT

26.4 If the Contractor is selected as a preferred supplier to support any component of the System, the Contractor must negotiate in good faith the terms of the contract under which the Contractor will supply the applicable services and other deliverables (**Support Contract**) based on:

(a) ProcureIT v 3.1;

(b) the ProcureIT v 3.1 template Order Forms for Module 5;

(c) the Baseline Support Terms included in Appendix L of the PIPP;

(d) Support_Plan_2014_00754_R20_V10 provided by the Contractor in their RFQ Response; and

(e) the draft Service Level Agreement (provided by the Customer to the Contractor on or around 22 October 2014).

27. Exchange of information between Agencies

27.1 The Customer may disclose, communicate or make available, any information concerning the Contractor or relating to the Customer Contract (including any Confidential Information of the Contractor) to one or more Agencies.

27.2 The Contractor acknowledges and agrees that:

(a) information about the Contractor from any source, including reports of performance, may be taken into account by Agencies (including the Customer) considering whether to offer the Contractor future opportunities for other work; and

(b) the communication of such information to any NSW government agency is a communication falling within section 30 of the *Defamation Act 2005* (NSW).

27.3 The Contractor releases the Customer, all other Agencies and the State of New South Wales from and against any claim or cause of action it has or may have arising out of, or in relation to, any disclosure or any communications contemplated in this clause 27 (**Released Matters**). The Customer may plead this clause 27.3 in bar to any proceedings commenced by the Contractor relating to the Released Matters.

27.4 The Contractor indemnifies the Customer against any losses, liabilities, damages, costs and expenses that the Customer or any other Agencies or the State of New South Wales suffers or incurs relating to:

(a) any of the Released Matters; or

(b) any claim by any persons arising out of or relating to the Customer disclosing, or an Agency using, any information provided by the Contractor in accordance with clause 27 of these Additional Conditions.

28. GIPAA

28.1 The Contractor acknowledges that the Customer may be required to publish certain information concerning this Customer Contract in accordance with sections 27 to 35 of the *Government Information (Public Access) Act 2009* (NSW).

28.2 If the Contractor reasonably believes that any part of the Customer Contract contains information which is commercial-in-confidence or could reasonably be expected to affect public safety or security, then the Contractor must immediately advise the Customer in writing, identifying the provisions and providing reasons so that the Customer may consider seeking to exempt those provisions from publication.

28.3 Within three days of receiving a written request from the Customer, the Contractor must (at no cost to the Customer) provide the Customer with immediate access to information referred to in section 121(1) of the *Government Information (Public Access) Act 2009* (NSW) (but excluding information referred to in section 121(2) of the *Government Information (Public Access) Act 2009*) contained in records held by the Contractor, in the format and using the medium, reasonably required by the Customer. This is a fundamental term of this Customer Contract.

29. Licence rights and open source software

29.1 If the Contractor supplies any software as part of, or as an output of, any Services, the Intellectual Property Rights of which are not assigned under clause 13.10 of Part 2 of the Customer Contract or licensed under the terms of Module 3, the Contractor grants to the Customer a non-exclusive, royalty free, perpetual, irrevocable licence to:

(a) install, run and use the that software for its business purposes;

(b) reproduce and copy that software as required to install, run and use the software or for any backup, archive or security purposes; and

(c) sublicense to any person to exercise any of the rights specified in clauses 29.1(a) or 29.1(b) of these Additional Conditions for the Customer's business purposes or to otherwise supply services to the Customer.

29.2 The Deliverables must not incorporate open source software in any software that is a Deliverable, unless otherwise approved by the Customer in writing.

29.3 If the Customer approves the incorporation of open source software in a Deliverable

(a) the Parties agree that the open source software will be licensed as 'Licensed Software' under the terms set out in clause 3; and

(b) the Contractor must ensure that the use or modification of that open source software will not result in an obligation to, disclose, licence or otherwise make available any part of the System, Customer Supplied Items or the Customer Environment or any other part of the Customer's Confidential Information to any third party.

30. Additional licence rights

30.1 In addition to any other rights granted under the Customer Contract, if the Deliverables are, or incorporate, any of the Contractor's Existing Material, then, on and from the date on which they are supplied, the Contractor grants the Customer a non-exclusive, irrevocable, royalty-free licence:

(a) to use, reproduce, modify and adapt the Contractor's Existing Material for its internal business purposes; and

(b) to sub-license to any other person to use, reproduce, adapt and modify the Contractor's Existing Material for the Customers internal business purposes, including to supply services and deliverables to the Customer.

30.2 The Contractor warrants that no third party Existing Material (not including Existing Material from the Contractor or a Related Entity) is included in any Deliverables. This section 30.2 does not deal with Open Source Software which is covered in section 29.

30.3 The Contractor warrants that it has all rights, licences, consents and other approvals necessary to grant the licenses in clauses 30.1 and 30.2 of these Additional Conditions.

30.4 For the avoidance of doubt, clause 30.1 and 30.2 does not give the Customer access to Source Code material unless otherwise provided for in the contract.

31. Liability to Agencies and the State of New South Wales

The Contractor acknowledges and agrees that the Customer holds the benefit of the Contractor's obligations, the Customer's rights and any release or indemnity under the Customer Contract as principal and on trust for each of RailCorp, Transport for NSW and NSW Trains (as if the obligation, right, release or indemnity had been expressed to be for the benefit of RailCorp, Transport for NSW and NSW Trains).

31.1 If any of RailCorp, Transport for NSW or NSW Trains suffers losses as a result of one or more acts or omissions of the Contractor or any of its Personnel relating to the performance, non-performance or termination of the Customer Contract, the Customer will be able to recover those losses from the Contractor:

(a) as if the losses were suffered or incurred by the Customer itself;

(b) to the extent that losses would have been capable of being recovered by the Customer had the Customer suffered those losses; and

(c) subject to the limitations and exclusions of liability set out in clause 18 of the Customer Contract.

32. Destruction of information

32.1 Subject to the Contractor's obligation under clause 24.2 of these Additional Conditions, the Contractor must, and must ensure that all of its Personnel, destroy or return:

(a) all Confidential Information of the Customer; and

(b) all other Customer Data (including any Personal Information),

that is in its, or any of its Personnel's possession or control:

(a) within 5 Business Days of a request from the Customer to do so; or

(b) on termination or expiry of the Customer Contract,

unless Contractor is required by law to keep any of this information. Any information kept by the Contractor in order to comply with any law must be kept subject to the obligations of confidentiality set out in this Customer Contract .

32.2 This clause 32 survives termination or expiry of the Customer Contract.

33. Defect rectification

APPLICATION AND INTERACTION WITH OTHER PARTS OF THE CUSTOMER CONTRACT

33.1 This clause 33 of these Additional Conditions sets out the general warranty and Defect rectification process for the Deliverables.

BREACH OF SERVICE WARRANTY

33.2 If the Contractor breaches any warranty in relation to any of the Services, the Customer may (in addition to any other remedies it may have at law or under the Customer Contract) require the Contractor to supply the Services again at the Contractor's cost.

DEFECTS

33.3 Subject to clause 33.4 of these Additional Conditions, without limiting any of the Customer's rights under law or the Customer Contract, if at any time during the Warranty Period for a Deliverable (that is not a Service), the Contractor becomes aware, or the Customer advises the Contractor of a Defect in that Deliverable, the Contractor:

(a) must do all things necessary to correct the Defect:

(i) in accordance with the timeframes specified in the Customer Contract; or

(ii) if no timeframe is specified in the Customer Contract, within 5 Business Days after the date on which the Defect was identified (or any alternative timeframe agreed between the Parties in writing); and

(b) warrants that the replacement or repaired Deliverable will comply with the applicable warranties in the Customer Contract.

33.4 Clause 33.3 of these Additional Conditions, does not apply to a Defect for a Deliverable to the extent that any of the exceptions to the warranties set out in the relevant Module under which that Deliverable was supplied applies.

REMEDIES FOR SUPPLIER FAILURE TO CORRECT DEFECTS

33.5 Without limiting any of the Customer's rights under law or the Customer Contract, if the Contractor does not correct a Defect in accordance with clause 33.3, the Customer may do any one or more of the following:

(a) require the Contractor to negotiate in good faith to agree a Change Request to the Customer Contract to provide a reduction in the Contract Price to reflect a diminution in value of the applicable Deliverable;

(b) either correct the Defect itself or by using another supplier, in which case the Contractor must pay the costs and expenses suffered or incurred by the Customer in doing so within 30 days of a demand by the Customer to do so; or

(c) pursue any other remedy it may have at law or under the Customer Contract.

34. Viruses

PROTECTION AND SCANNING

34.1 The Contractor must, and must ensure that its Personnel:

(a) use appropriate processes and up-to-date industry standard detection software (**Virus Software**) designed:

(i) to prevent the introduction of Viruses into, and to detect and eliminate, Viruses from the Deliverables; and

(ii) to prevent the introduction of Viruses into:

(A) the software or systems used by the Contractor or any of their Personnel in the course of supplying the Deliverables; or

(B) the Customer Environment or any Customer Supplied Items by the Contractor or a member of its Personnel; and

(b) prior to supplying a Deliverable that is susceptible to Viruses, scan the Deliverable using the Virus Software; and

(c) prior to connecting any devices (including laptops, flash drives, memory or other devices) to any software or systems used by the Customer, scan the device using the Virus Software.

GENERAL OBLIGATIONS

34.2 The Contractor must not, and must ensure that its Personnel do not:

(a) supply a Deliverable if a Virus has been detected in that Deliverable, until the Contractor (or member of its Personnel) is certain that the Virus has been eliminated;

(b) connect any device on which a Virus has been detected to any software or system used by the Customer, until the Contractor (or member of its Personnel) is certain that the Virus has been eliminated; or

(c) introduce a Virus into a Deliverable or any software or system used by the Customer in the course of performing any of its obligations under the Customer Contract.

REMEDY

34.3 In addition to any other rights the Customer may have under the Customer Contract, if a Virus is introduced into a Deliverable or any of the Customer's software or systems:

(a) by the Contractor or any of its Personnel;

(b) as a result of the Contractor's or any of its Personnel's negligence; or

(c) as a result of the Contractor breaching any of its obligations under clause 34.1 or 34.2 of these Additional Conditions or any other term of the Customer Contract,

the Contractor must pay the costs and expenses incurred by the Customer relating to:

(a) identifying and removing the Virus; and

(b) restoring any data lost, damaged or corrupted as a result of the Virus to the last backed-up version of that data and otherwise remedying the impact of the Virus.

35. Civil Liability Act and Liability

35.1 The Parties exclude the operation of Part 4 of the *Civil Liability Act 2002* (NSW).

35.2 The limitations of liability and exclusions set out in clause 18 of Part 2 of the Customer Contract do not apply to the Contractor's liability for a breach of, or under, any of clauses 2222,27.427.4 and 30.330.3 of these Additional Conditions.

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36. Cross Termination

36.1 The Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Termination Notice if the Customer gives a termination notice for another Customer Contract with an Interfacing Contractor other than for convenience. Termination under this clause 36 will be treated in the same way as a termination for convenience under clause 25.3 of Part 2 of the Customer Contract and clause 39 of these Additional Conditions. For the avoidance of doubt, the Contractor will be entitled to recover liabilities, costs or expenses in the manner set out in clause 39 of these Additional Conditions.

37. Termination at the end of a Stage

37.1 The Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety at the end of a Stage in its sole and absolute discretion.

37.2 The Customer will not be liable for any amounts as a result of a termination under clause 37.1 of these Additional Conditions.

38. Termination for failing to pass the Acceptance Tests

38.1 If the Customer rejects a Deliverable under clause 10.12(e) of Part 2 of the Customer Contract, the Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent that it relates to one or more Deliverables.

38.2 If the Customer gives the Contractor a Termination Notice under clause 38.1 the Contractor must refund all amounts paid for the Deliverables the subject of the Termination Notice within 10 Business Days after the date on which the Termination Notice is given.

39. Costs relating to a termination for convenience

39.1 If the Customer gives a Termination Notice under clause 25.3 of Part 2 of the Customer Contract, and the Contractor is entitled to recover liabilities, costs or expenses under clause 25.4 of Part 2 of the Customer Contract (**Termination Costs**), the Contractor may only do so to the extent that:

(a) those Termination Costs are unavoidable and are directly, reasonably and necessarily incurred by the Contractor as a result of the termination;

(b) those Termination Costs have not already been recovered by the Contractor (including as part of the Contract Price);

(c) the Contractor substantiates that those costs have been or will be incurred to the Customer's satisfaction (acting reasonably);

(d) those costs relate exclusively to the Deliverables and would not have been incurred by the Contractor but for the termination; and

(e) the Contractor has not been able to mitigate those costs despite complying with its obligation under clause 25.3 of Part 2 of the Customer Contract.

40. Transition Out

TRANSITION OUT PERIOD

40.1 The **Transition Out Period** for a Deliverable (each a **Relevant Deliverable**) starts on the date on which a Termination Notice is given for the Customer Contract the extent the Termination Notice relates to that Relevant Deliverable, and ends on the date on which the Customer gives the Contractor a Notice in Writing stating that the Transition Out is complete.

TRANSITION OUT PLAN

40.2 At the commencement of a Transition Out Period, the Parties must negotiate in good faith to agree as quickly as possible a plan for the Transition Out (**Transition Out Plan**) including:

(a) the steps, tasks and activities required to complete Transition Out and timetable for those steps, tasks and activities;

(b) a resources inventory which sets out the resources required to supply the Relevant Deliverables; and

(c) the time at which, and circumstances in which, the Contractor will cease supplying the Relevant Deliverables.

40.3 If the Parties do not reach agreement on the Transition Out Plan within 30 Business Days (or as otherwise agreed in writing between the parties) after commencement of the applicable Transition Out Period, the Contractor must provide the assistance required by the Customer

(acting reasonably), at the times required by the Customer (acting reasonably). The directions issued by the Customer under this clause will collectively constitute the Transition Out Plan.

40.4 The Contractor may not charge any amounts for preparing a Transition Out Plan.

TRANSITION OUT ASSISTANCE

40.5 During a Transition Out Period, the Contractor must:

(a) perform all of the steps, tasks and activities allocated to the Contractor as the Contractor's responsibility in the Transition Out Plan at the times and in the manner specified in the Transition Out Plan;

(b) provide any other assistance, and perform all other steps, tasks and activities, required by the Customer or any nominee of the Customer (acting reasonably) to complete the Transition Out;

(c) to the extent that the Relevant Deliverables are Non-Recurring Services:

(i) deliver to the Customer copies of all work in progress relating to Relevant Deliverables that has been created or developed (**WIP**); and

(ii) permit (including granting all necessary licences and providing all necessary training) the Customer and its Personnel to use the Contractor's methodologies to the extent necessary to allow the Customer and its Personnel to complete WIP; and

(d) provide any training required by the Customer to permit the Customer or any members of its Personnel to understand the Relevant Deliverables (and in the case of any WIP, to use and further develop that WIP),

(Transition Out Assistance).

40.6 Within 10 Business Days after the date on which the Transition Out Period commences (or such later date as agreed between the Parties in writing), the Contractor must (to the extent it has not already done so) give the Customer the most up to date copy of the New Material.

40.7 If the Relevant Deliverables are Non-Recurring Services, the Contractor must cease supplying those Relevant Deliverables on the date on which the Contractor receives that Termination Notice.

40.8 If the Contractor ceases to supply a Relevant Deliverable, the Contractor is not entitled to, and must not, give the Customer a Tax Invoice for the Price to the extent it relates to those Relevant Deliverables, unless the amount relates to the period before the date on which the Contractor was required to cease supplying those Relevant Deliverables.

COSTS FOR TRANSITION OUT

40.9 The Customer is not obliged to pay any amount for the Transition Out Assistance:

(a) to the extent it can be supplied using the same Personnel that the Contractor uses to supply the Relevant Deliverables or any other Deliverables where the Services provided by those Personnel have already been paid by the Customer (the principle being that the Contractor is not required to commit additional resources for transition out without further negotiation); or

(b) if the Customer gave the Contractor a Termination Notice for cause under any of clauses 6.34 or 25.2 of Part 2 of the Customer Contractor, clauses 14.10 or 37 of these Additional Conditions or otherwise as a result of an act or omission of the Contractor or any of its Personnel.

40.10 If clause 40.9 of these Additional Conditions does not apply, the Customer must pay for any Personnel required by the Contractor to supply the Transition Out Assistance which are in addition to the Personnel the Contractor uses to supply the Deliverables. The Price for that Transition Out Assistance will either be:

(a) agreed and set out in the Transition Out Plan; or

(b) calculated on a time and materials basis using rates approved by the Customer in writing up to a maximum approved by the Customer in writing.

41. Access to Site

41.1 The Contractor must comply with all of the Customer's policies and procedures that apply to the Site, as updated by the Customer from time to time.

42. Changes in Laws

42.1 If the Contractor is required to comply with any Laws under the Customer Contract, the Contractor must comply with those Laws as they exist from time to time.

42.2 The Contractor must comply with clause 42.1 at its own cost unless the change in Law affects only the rail industry. If the change in Law affects only the rail industry, the Contractor may submit a contract variation if the change in Law results in material additional costs to the Contractor in the provision of the Services under the Customer Contract.

42.3 **"Laws"** for purposes of this clause 42 include Statutory Requirements, statutes, regulations, by-laws, ordinances or subordinate legislation, standards and codes of conduct.

Schedule 12: PIPP

1 Introduction

1.1 The Customer is establishing a new Rail Operations Centre (**ROC**).

1.2 The Customer wishes to procure the design, installation, testing and implementation of new technologies at the Site which will replace the current rail operation technology and provide enhanced capability to improve key 'day of operations' processes (the **Project**).

1.3 The Project consists of the development of three new technology systems (the **Applications**). These Applications include:

a) DTTS provided by Quintiq Pty Ltd;

b) IMS provided by the Contractor; and

c) CIMS provided by Thales Australia Limited.

1.4 The Customer has engaged Ajilon Australia Pty Ltd as its Systems Integrator, responsible for acting as the Customer's agent to oversee the technical management of the Project (the **Systems Integrator**).

1.4A The Parties acknowledge that this Customer Contract has been developed as follows:

a) an ECI Contract was entered into by the Parties on 24 December 2014. The output of the ECI Contract was a High Level Solution Design and BAFO;

b) on 15 October 2015 this Customer Contract was entered into by the Parties as the 'Detailed Design Contract. The Detailed Design Contract refined the technical scope of the IMS that was developed in the ECI Contract;

c) Change Request 1 was executed on or about 25 February 2015 to provide additional funding for Release 1 Detailed Design and additional funding for Release 1 implementation work;

d) Change Request 2 was executed in July 2016 to add in REM Mobile functionality and system administration services; and

e) Change Request 3 was executed to provide for REM Mobile deployment services and REM 2016.2 development and delivery incorporating Customer requirements.

The current scope of this PIPP is from Detailed Design for Release 1 through to implementation of Release 1.

The Parties further acknowledge that:

a) the Services and Deliverables produced or provided under the Detailed Design Contract will be required for Release 3; and

b) Support and maintenance services are not a part of this PIPP at this time but has been baselined by the Parties.

1.5 By implementing the Project the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail: Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay**: Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15% by 2018.
Increased operational performance and opportunity for timetable enhancements: Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay:** Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the services back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The Project will reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer information during delays: Improving the customers' ability to make decisions about their transport options.	**Reduced Customer Perceived Delay:** Improvements to the timeliness, relevance and consistency of customer information, particularly during disruption, will reduce the customers' perceived time of their journeys by 11% by 2018.
Better realising the benefits of future investments in rail capacity: Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function:** The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC infrastructure design requirements.
A new world-class operating centre and culture: Transforming the way 'day of operations' activities are managed within the Customer, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment:** The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service: Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX:** The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability: Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX:** enabled by new systems, process improvements and colocation.

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of design, build, test and deployment of IMS component of the Project.

2 Overview of Scope of Work and Project Delivery Model

2.1 Phased Approach

2.1.1 The Project shall be delivered as a multi-release project comprising the following releases:

a) **Release 1**: IMS implemented as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the Contractor, as well as customised TIBCO middleware delivered by the Systems Integrator. The Customer's AAD of Release 1 will be when IMS achieves 45 days of Clear Running in the Production Environment.

b) **Release 2**: CIMS implemented separately as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the CIMS Key Contractor, as well as customised middleware delivered by the Systems Integrator.

c) **Release 3**: the integration of the Applications with each other and into the Customer Environment. This entails the provision of upgraded Licensed Software by the Contractor, as well as additional customisation of middleware delivered by the Systems Integrator. Release 3 involves the implementation of the System. The Customer's AAD of Release 3 will be when IMS achieves 45 days of Clear Running in the Production Environment.

d) **Release 4**: the deployment of the System into the Site, being the Rail Operations Centre in Alexandria, NSW, Australia or such other location as specified by the Customer to the Contractor in writing from time to time.

2.1.2 As at the Commencement Date, this Customer Contract is for Release 1 only. The Parties acknowledge and agree that Release 3 shall be incorporated into this Customer Contract by way of a Change Request once the scope for Release 3 has been agreed.

2.1.3 Included in the initial three releases will be the following activities:

a) **Detailed Design**: Detailed Design for Release 1 of IMS is part of this Customer Contract. A separate Detailed Design phase shall be performed for Release 3.

b) **Build Phase**: comprising the configuration and customisation of the Licensed Software by the Contractor. This phase additionally involves customisation of the TIBCO middleware by the Systems Integrator.

c) **Data Phase**: which is a subset of the Build Phase and comprises the identification and configuration of data required to enable the Licensed Software to achieve full functionality and performance. The majority of this work is performed by the Systems Integrator with the Contractor providing necessary assistance.

d) **Testing Phase**: comprising testing performed at the Contractor's site, as well as testing performed in conjunction with the Systems Integrator and Customer at the Site.

e) **Deployment**: comprising all necessary activities required to install the Licensed Software into the Customer Environment.

f) **Release 1 Program Maintenance and Support**: comprising support of the System preceding the Actual Acceptance Date of Release 3 in accordance with Section 2.1.1c). This is subject to further negotiation between the Parties.

g) **Maintenance and Support**: commences when the Licensed Software provided in Release 3 has been accepted by the Customer and Goes Live in the Production Environment.

2.1.4 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional Services and Deliverables agreed by the Parties as being the responsibility of the Contractor; and

b) perform all other services, functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i) reasonably related to the Services or Deliverables described in this PIPP; or

ii) reasonably required for the supply of the Services and Deliverables described in this PIPP.

3 Delineation of Responsibilities

3.1 Role of the Customer

3.1.1 The Customer is responsible for:

a) establishing all necessary contractual arrangements with the Key Contractors;

b) providing commercial management of the Systems Integrator and the Key Contractors;

c) providing access to the systems required by the Contractor as set out initially in the Initial Requirements and now in the Updated Requirements;

d) providing the necessary CSI required by the Contractor in a timely manner (including any software reasonably required by the Contractor); and

e) provisioning and setting up of hardware on which the Licensed Software will be hosted as detailed in Module 3.

Customer Supplied Items to be provided by the Customer are detailed in section 17.

3.2 Role of the Contractor

3.2.1 The Contractor must:

a) support the Systems Integrator as necessary to implement the Project;

b) collaborate with the Customer and the Key Contractors;

c) customise and/or configure the Licensed Software to deliver the Customer's functional and non-functional requirements agreed for the relevant Release;

d) provide the relevant version of the Licensed Software as applicable to the relevant Release;

e) provide suitably experienced and qualified Personnel;

f) provide all Services detailed in this Customer Contract; and

g) provide all Deliverables detailed in this Customer Contract,

as further described in this PIPP.

3.3 Role of the Systems Integrator

3.3.1 The Systems Integrator shall:

a) act as the Customer's agent to manage the end to end delivery of the System;

b) use all reasonable endeavours to resolve disputes at the technical level prior to following the escalation path detailed in the governance model set out in Appendix J (to the extent of any inconsistency between clause 22 and Appendix J, Appendix J will prevail);

c) to the extent detailed in this PIPP, consult, liaise or manage the Services and Deliverables provided or performed by the Key Contractors;

d) oversee the implementation of Release 1;

e) configure the TIBCO middleware to enable integration of REM into the Customer Environment; and

f) provide suitably experienced and qualified Personnel.

4 Definitions

Capitalised terms which are not defined in this PIPP have the meaning given to them in the Order Documents or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

AAD means 45 days of Clear Running after the Licensed Software is in the Production Environment as further specified in Section 2.1.1 of this PIPP.

Build Phase means the phase described in Section 8 of this PIPP.

CIMS means the Customer Information Management System.

Clear Running occurs when the Licensed Software achieves uninterrupted performance in the Production Environment without a Severity 1 or Severity 2 Defect (as defined in section 9.7 of the PIPP) arising. For the avoidance of doubt, Clear Running only applies to the performance of the Contractor's Licensed Software and not the configuration of the Customer's data, TIBCO middleware, Customer's Environment nor any 3rd party product or service.

Configuration and Customisation means the activities to be undertaken during the Build Phase, as described in Section 7.3 of this PIPP.

Cross Stream Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract of this PIPP.

Customer Environment means the equipment, software, systems and other infrastructure owned, leased or licensed by the Customer with which the System must integrate, be compatible and interoperate.

Data Cleansing means the process of detecting and correcting corrupt or inaccurate records of a Customer supplied data set.

Data Configuration means manipulation of the customer data in to an appropriate format to meet the requirements set out in section 8.4 of this PIPP and the successful insertion of the data into the System.

Data Management means the activities described in Section 8 of this PIPP.

Data Phase means the phase described in Section 8 of this PIPP.

Data Profiling means the identification and extraction of source date relating to IMS from the Customer's system as further described in Section 8.3.1 of this PIPP**.**

Data Profiling Team means the Systems Integrator's team responsible for Services and Deliverables as detailed in Section 8.3.1 of this PIPP.

Deployment (Release 1) Phase means the phase described in Section 10 of this PIPP.

Detailed Design Contract means the Contract entered into by the Customer and Contractor dated 15 October 2015.

Detailed Design Documents means:

a) each document that is developed by the Contractor as part of the High Level Solution Design Phase and the Detailed Design Phase and accepted by the Customer; and

b) the detailed functional specifications and technical specifications for the System developed by the Contractor during the Build and Test Phases and accepted by the Customer.

The Detailed Design Documents set out the overall scope of the System as updated or replaced from time to time in accordance with this PIPP or otherwise in accordance with the Customer Contract.

Detailed Design (Release 1) Phase means the phase described in Section 5 of this PIPP.

DMC means Data Management Client; the REM thick client for configuration management supplied by the Contractor.

DTBRS means the Detailed Technology Business Requirements Specification developed by the Customer during the Detailed Design Phase and updated from time to time.

DTTS means the Day of Operations Timetable System provided to the Customer by Quintiq Pty Ltd.

ECI Contract means the Early Contractor Involvement Contract that was entered into by the Parties on 24 December 2014.

EMC means Emergency Management Client.

ERD means Entity Relationship Diagram.

ERM means Enterprise Release Management.

Entry Criteria for a Phase means the criteria that must be met before the Contractor is entitled to commence the work for that Phase, as set out in this PIPP.

Go Live means, when IMS has been deployed into the Production Environment and is ready for operational use.

High Level Solution Design Phase means the phase undertaken during the ECI Contract from which, amongst other Deliverables, the High Level Detail Design and BAFO were provided to the Customer by the Contractor.

HP ALM means Hewlett Packard Application Lifecycle Management.

IMS means the Incident Management System provided by the Contractor to the Customer under this Customer Contract and as set out in the Initial Requirements.

Initial Requirements means the requirements set out in Appendix A of this PIPP.

Initial Data Load means priming of the Licensed Software with relevant customer data in the first instance.

Interface means each interface between IMS and the Customer Environment for Release 1, and the Applications for Release 3, unless specified otherwise and as detailed in the SAD in Appendix A and the Interface Specifications in Appendix A.

Interface Documentation means a description of each Interface, such as SIRI and Notification Interface, including XML schema definition where applicable detailed in the SAD in Appendix A and the Interface Specifications in Appendix A.

Issues Register has the meaning given to that term in Section 16.4.1 of this PIPP.

ITMS means the Contractor's Defect Reporting Tool.

Key Contractor means the Contractors engaged by the Customer to deliver their respective part of the ROC Technology Solution including the Systems Integrator.

Load and Performance Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

Master Data means a description of Master Data import definitions, in the form of an Excel spreadsheet describing the mandatory fields.

Operational Acceptance Testing (OAT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents.

PIV means Post Implementation Verification which is an activity verifying that REM has been successfully deployed to the Production Environment, that it is ready for business operations to 'go-live' and that no deployment roll back is required.

Product means the licensed software provided by the Key Contractor.

Production Environment means the real-time staging of programs that run an organisation are executed, and includes the personnel, processes, data, hardware, and software needed to perform day-to-day operations

Program Maintenance Phase means the phase described in Section 12 of this PIPP.

Project has the same meaning given to that term in Section 1.2of this PIPP.

Project Management Plan means the plan described in Schedule 2 of this Customer Contract.

Project Preparation Phase means the activities to be performed by the Contractor prior to initiating the Detailed Design Phase.

Project Schedule means the Project Schedule jointly developed by the Customer, the Contractor and Key Contractors detailing the activities to be performed, their interdependencies and the related timeframe for those activities and as updated from time to time by the Parties, the current version of which is set out in Appendix C.

REM means the Railway Emergency Management application provided by the Contractor and includes:

a) REM 2016.R1;

b) REM Mobile 2016.R1

c) REM 2016.R2; and

d) REM Mobile 2016.R2.

REM 2016.R1 means the Contractor's standard software customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM 2016.R2 means the Contractor's standard software customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM Data Model means a description of the REM data model in the form of an ERD.

REM Mobile 2016.R1 means the Contractor's standard software as customised to meet the Customer's Release 1 mobility requirements as documented in DTBRS for IMS Notifications version 0.3.

Requirements means the Initial Requirements during the Detailed Design Phase or the Updated Requirements during the Implementation Phase.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC means the Rail Operations Centre.

ROC Technology Solution means the Day of Operations Timetable System, Incident Management System, Customer Information Management System and TIBCO middleware integrated into the Customer's Environment in accordance with the Customer's requirements.

Security and Penetration Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

SAD means the Solution Architecture Document detailed in Appendix A.

Systems Integration Testing (SIT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

System Testing (SydneyTrains) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents) of this PIPP.

SIRI means Service Interface for Real-time Information, a protocol for that allows distributed systems to exchange real time information.

Support Services means the support services described in the draft Module 5 which is attached as Appendix L of this PIPP.

System means:

a) the Incident Management System supplied by the Contractor; and

b) TIBCO interfaces developed by the Systems Integrator,

as customised and configured in accordance with the Customer's Requirements.

Systems Integrator has the meaning in Section 1.4of this PIPP.

System Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

TEMS means Technical Environment Management Strategy.

Testing Phase means the phase described in Section 9 of this PIPP.

TIBCO means *The Information Bus Company's* middleware product that provides integration, analytics and event information processing.

TMT means Test Management Tool.

TOM means Test Objective Matrix.

TSR means Test Summary Report as described in Section 7.4 of this PIPP.

Updated Requirements means the Initial Requirements that are updated in the Detailed Design Documents.

Unit Testing (UT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

Validation means confirmation by examination and through provision of objective evidence that the requirements for a specific intended use or application have been fulfilled.

Verification means confirmation by examination and through provision of objective evidence that specified requirements have been fulfilled.

Web Portal means the REM thin client for read only incident investigations, audit log viewer and standby client.

5 Detailed Design (Release 1) Phase

5.1 Overview

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design Documents all of the Requirements (based on the Initial Requirements) and develop the Detailed Design Documents for Release 1 of the System.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase (as specified in Section 5.3) are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase (as specified in Section 5.4) are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase are specified in the table below:

#	Criterion	Description
	Previous Phase Discharged	All Services that the Systems Integrator is required to supply during the Project Preparation Phase have been supplied.
	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Systems Integrator as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensuring all required Systems Integrator Personnel are present at the meeting(s); c. chairing and presenting the System meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtaining participant approval of contents.
	Participate in all necessary workshops with the Customer, the Systems Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes to those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
	Develop the Detailed Design Documents for the System for Release 1.
	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Systems Integrator configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of Release 1 to be implemented is understood by all parties.
	Conduct a risk management workshop with the Customer, the Systems Integrator and all relevant Customer stakeholders to identify and agree on risks to Release 1.

#	Description
	Provide the Key Contractors with all the necessary assistance reasonably requested by the Key Contractors during the Detailed Design (Release 1) Phase.
	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the System) to enable the Key Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4 of this PIPP.
	Do all other things necessary to develop and supply the Deliverables described in section 5.4 of this PIPP and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Detailed Design Deliverables

5.4.1 The Systems Integrator is responsible for the following Deliverables with appropriate input from the Contractor (refer to Appendix F for allocation of accountabilities and responsibilities):

a) The Transformation and Change Deliverables specified in the table below are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Systems Integrator during the High Level Solution Design Phase.

b) Where the Systems Integrator must contribute to a Deliverable specified in the table below, the Contractor must work with, contribute to and provide all reasonable assistance requested by the Systems Integrator to complete the relevant Deliverable.

c) The Systems Integrator must, in collaboration with the Key Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase. The approval of each Deliverable will be the responsibility of the Customer (or the Customer's nominee).

#	Deliverable	Description	Approval	Status as at 19 August 2016
Technology Deliverables				
	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms and technology required to deliver the functional and non-functional requirements. The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. document overview; b. document inputs; and c. phase scope. Systems architecture: a. high level conceptual overview; b. level 2 business processes;	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		c. application usage view; d. system integration view; e. application structure view; f. information architecture (including reference data requirements); g. infrastructure usage view; h. implementation and deployment view; and i. manual integration. Rationale and justification for detailed design architectural approach: a. rationale; b. architecture risks; c. architecture issues; d. architecture constraints; e. architecture assumptions; f. architecture decisions; and g. architecture dependencies.		
	Release 1 Functional Specification	The Release 1 Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the IMS meets the DTBRS that shall be developed by the Customer during the Detailed Design Phase. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)	Closed
	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability; e. manageability; f. performance; g. portability;	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		h. reliability; i. reporting; j. scalability; k. security; and l. usability.		
	Release 1 Integration Specification	The Release 1 Integration Specification describes the high level integration points between the IMS and other systems in the Customer Environment. A detailed interface specification for each Interface will be created by the Systems Integrator during the Build Phase. The following subjects are included in the Release 1 Integration Specification, one entry for each integration service: a. high level data flows between applications to support the business processes; b. data objects required by consumer – request; c. data objects available from consumer – response; and d. data object transformations required. The Release 1 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each Interface to be created by the Systems Integrator during the Build Phase will describe the relevant Acceptance Criteria for each Interface.	The Customer (or its nominee)	Closed
	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)	Closed
	Release 1 Data Management Plan	This document defines: a. the design, build, control and data management activities required to	The Customer (or its	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		ensure data quality of all data (reference data, master data and transactional data) within IMS, based on business rules provided by the Customer, and effective and efficient system integration of IMS with other systems in the Customer Environment; and b. a high-level approach to management of all data within IMS which aligns with the approach outlined in the SAD.	nominee)	
	Release 1 Data Technical Analysis Outputs	Contribute to Release 1 Data Technical Analysis. Outputs must include: a. Data Requirement Classifications (Master Data, Migration Data, BI data); b. Data Migration Requirements and Rules; and c. Data quality definition (at data attribute levels). Release 1 Data Technical Analysis Outputs also includes: 1. for each type of reference data and Master Data used by IMS (as appropriate): a. the real-world object type represented by that data set; b. the recommended data maintenance method(s) in IMS; c. the relevant SME(s), functional owner(s), source of requirement and/or Customer source from which the data may be obtained; d. whether IMS can play the role of DMA source for that data; e. the volatility of that data; and f. data translations (if any) required to integrate with existing Customer systems 2. for each type of master or reference data requested by IMS from other systems in the Customer Environment: a. what data is required in the request and response messages; b. the business rules governing each message; and c. how those business rules are enforced; 3. for each type of transactional data flowing between IMS and another system (in either	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		direction): a. the source and target systems; b. the message type and message header type; c. any encryption, security or certification considerations; d. the methods used to handle non-compliant data in the source system; e. any record selection filters required; and f. any record level transformations required.		
	Updated Technology Implementation Strategy	Contribute to the development of the Updated Technology Implementation Strategy being developed by the Systems Integrator. The Updated Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the System, including, at a minimum: a. personnel and organisation; b. implementation approach, including: i. releases; ii. system Verification and Validation; iii. system change management; iv. release and deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for Go Live; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. Verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		decommission an old system/process/function.		
	Release 1 Technology Implementation Plan (Template)	The Release 1 Technology Implementation Plan (Template) will be developed and agreed. The plan will outline the plan approach for the roll out of the relevant components for Release 1. The final version of Release 1 Technology Implementation Plan will be developed during the Build Phase and provide a detailed plan and schedule of activities to deploy the System into the Customer Environment. It must address training, development of, and installation of the IMS into the Customer Environment, handover to the Customer from the Contractor, Go Live and roll back. The final version must be provided at least 40 Business Days prior to the anticipated deployment date for Release 1.	The Customer (or its nominee)	Closed
	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the Systems Integrator. The Technology Test Strategy refers to the program test framework and must include the following: a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability; assumptions; test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; Defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations);	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document revision and history; and i. Approvals.		
	Updated Project Management Plan	Contribute to the development of the Project Management Plan being developed by the Systems Integrator. Project Management Plan submitted by the Contractor during the High Level Solution Design Phase shall be used as the base document and will be updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The Project Management Plan must specify, as a minimum, the following: a. current project status; b. project overview; c. scope and deliverables; d. solution approach, including: i. architecture and phase approach; ii. organisation change management; and iii. delivery approach; e. budget and schedule; f. dependencies; g. roles and responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 5.4 of this PIPP; and k. key risks and issues.	The Customer (or its nominee)	Closed
	RACI	Contribute to the RACI Deliverables being developed by the Systems Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Key Contractors and the Customer. Note: the output of this Deliverable is included in Appendix F.	The Customer (or its nominee)	Closed
	Agreed Final Contract	The Customer Contract will incorporate certain detailed design activities. The Customer Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor	Closed
	Detailed Implementation & Maintenance	The Detailed Design, Implementation and Support PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution	The Customer and	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
	Phase PIPP	Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	Contractor	
	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Key Contractors (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)	Closed
	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the Systems Integrator. The Release 1 System Test Plan describes how the testing will be delivered for the Release 1 System Test phase and must include: a. test plan identifier; b. references; c. introduction; d. test objectives; e. test items; f. software risk issues; g. features to be tested and traceability; h. features not to be tested and reasons; i. approach including the use of stubs, simulators etc; j. item pass/fail criteria (if different from strategy); k. suspension criteria and resumption requirements (if different from strategy); l. test deliverables; m. environmental needs; n. staffing and training needs (if different from strategy); o. responsibilities; p. schedule of tasks and assigned	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		staff; q. planning risks and contingencies; r. approvals; and s. glossary.		
	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the Systems Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other Deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)	Closed
	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the Systems Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. booking and reserving test systems; b. tracking environment changes; c. managing environment contention; d. code/defect management (code promotion processes); e. environment scheduling; f. configuration tracking; g. data management (extracts, transforms loads); and h. managing interdependent projects.	The Customer (or its nominee)	Closed
Transformation and Change Deliverables				
	Operating Model	Contributing to the development of the Operating Model being developed by the Systems Integrator. The Operating Model must document and /or identify: a. best practice levels 2-4 process flows; and b. capability gaps in systems and	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		processes. The process model will conform to best practice principles. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation. Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Best practice process flows Deliverable description**: The best practice process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following: a. best practice levels 2-4 process flows; b. Validation of processes against real life scenarios. **Capability gaps in systems and processes Deliverable description**: Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended best practice process flows to confirm the changes to processes and capabilities. The key focus of this Deliverable will be on the level 4 gaps and/or variations in processes as dictated by the out of the box software technology processes.		
	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)	Closed
	Change Impact	Contribute to the development of the Change	The	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
	Analysis (Release 1)	Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions : a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to	Customer (or its nominee)	

#	Deliverable	Description	Approval	Status as at 19 August 2016
		optimise the benefits introduced by new technology and processes within the ROC. A Change Impact Analysis will be provided prior to Release 1.		
	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the Systems Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)	Closed

5.4.2 The Parties acknowledge and agree that the Detailed Design (Release 1) Phase Deliverables marked "Closed" above were received and accepted by the Customer during the Detailed Design Phase.

5.5 Exit Criteria

The Exit Criteria for Detailed Design (Release 1) Phase are:

#	Criterion	Description
	Completion of all Detailed Design Deliverables	The Customer has accepted the Detailed Design Deliverables set out in section 5.4 of this PIPP.

6 Detailed Design (Release 3) Phase

6.1 Overview and purpose of Detailed Design (Release 3) Phase

6.1.1 The purpose of the Detailed Design (Release 3) Phase is to document and confirm in the Detailed Design Documents all of the Requirements (based on the Updated Requirements) for Release 3 (which will include updating the Detailed Design Documents created during Detailed Design (Release 1) Phase).

6.2 Services and Deliverables under Detailed Design (Release 3) Phase

6.2.1 The Contractor acknowledges and agrees that, the Customer may elect, in its absolute discretion, to enter into negotiations to amend this Customer Contract for:

a) the Detailed Design (Release 3) Phase Services for IMS. The Services to be supplied will be some or all of those Services described in Section 5.3, except that the Services will consider IMS being integrated into DTTS and CIMS;

b) the Detailed Design (Release 3) Phase Deliverables for Release 3. The Deliverables to be provided will be some or all of those Deliverables described in Section 5.4 except that the Deliverables will consider IMS being integrated into DTTS and CIMS; and

c) subject to the Customer's acceptance of the Release 3 Detailed Design Documents, proceed to the Build, Test, Deployment and Support Phases detailed below.

7 Build Phase

7.1 Overview

7.1.1 The purpose of the Build Phase is to:

a) configure and customise the Licensed Software to fulfil the requirements specified in the Updated Requirements specified in Appendix A;

b) provide alpha and beta versions of the Licensed Software to the Customer to enable early visibility of the functionality of the Licensed Software; and

c) in collaboration with the Systems Integrator, customise the Licensed Software to interface with the TIBCO middleware and other Customer systems as detailed in the SAD.

7.1.2 The Contractor must ensure that:

a) all of the Services and Deliverables that it is obliged to supply under the Build Phase are supplied and completed;

b) it will work collaboratively with the Systems Integrator to deliver the Services and Deliverables; and

c) all Deliverables that it is obliged to supply under the Build Phase are accepted by the Customer, on or before the relevant date(s) specified in the Project Schedule.

7.2 Entry Criteria

7.2.1 The Entry Criteria for the Build Phase are specified in the table below:

#	Criterion	Description
	Detailed Design (Release 1) Phase completed to necessary level to start the Build Phase	All Services that the Contractor is required to supply during the Detailed Design (Release 1) Phase have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1) Phase.
	Technical Documents Approved	The Customer has accepted all Deliverables supplied in the Detailed Design (Release 1) Phase or, in the Customer's sole and absolute discretion, those Deliverables were at the necessary level to start the Build Phase. Where one or more Deliverables in the Detailed Design (Release 1) Phase have not been accepted by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.

7.3 Services

7.3.1 Subject to section 7.2, the Contractor must supply the following Services for the Build Phase:

#	Description
	Licensed Software (REM 2016.R1) The Contractor shall Customise the Contractor's standard Licensed Software as detailed in the Initial Requirements in Annexure A to develop REM 2016.R1.
	Licensed Software (REM Mobile 2016.R1) The Contractor shall Customise the Contractor's standard Licensed Software detailed in the Initial Requirements in Annexure A to address the Release 1 Mobility requirements documented in DTBRS for IMS Mobile Notifications Version 0.3
	Licensed Software (REM 2016.R2) Customisation of REM 2016.R2 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2 based on the DTBRS which incorporates REM Release 2016.R2 and REM Mobile 2016.R2.
	Licensed Software (REM Mobile 2016.R2) Customisation of REM Mobile Release 2016.R2 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2 based on the DTBRS which incorporates REM Release 2016.R2 and REM Mobile 2016.R2.
	System Testing The Contractor will perform testing of the REM products at their development site and in accordance with the Contractor's existing in house processes. The Contractor shall provide the TSR to demonstrate, to the Customer's satisfaction, that the Licensed Software has been subjected to an appropriate level of testing to ensure it is fit for purpose.
	TIBCO Interfaces As required, the Contractor shall support the Systems Integrator, including provision of technical advice and assistance to enable the Systems Integrator to develop the interfaces for TIBCO.
	Data Profiling The Contractor shall support the Customer and Systems Integrator's data profiling team as detailed in Section 8.3.1, to identify and extract data for use with the IMS.
	REM Installation The Contractor shall install the Licensed Software in the Customer Environment to enable the Parties to enter SAT.
	Data Configuration – System The Contractor shall support the Systems Integrator as required to undertake configuration of the data as required by the Customer to enable the Test Phase to commence.

7.4 Build Deliverables

Updates to Detailed Design Deliverables

7.4.1 The following Deliverables that were previously provided by the Contractor shall be updated, if required, during the Build Phase to reflect, alternative approaches to the build, or delivery of the Services, or technological issues not contemplated during the High Level Solution Design Phase and/or the Detailed Design Phase.

7.4.2 The Contractor must supply, or provide input into the following Deliverables as set out in the RACI. The Contractor shall provide all reasonable input and feedback to the Systems Integrator to ensure the Deliverables are fit for purpose.

#	Deliverable	Description
	Release 1 Architecture Specification	The updated Release 1 Architecture Specification will reflect the design of the “as built” System developed during the Build Phase.
	Release 1 Non-Functional Design	The updated Release 1 Non-Functional Design will reflect the design of the “as built” System developed during the Build Phase.
	Release 1 Integration Specification	The updated Release 1 Integration Specification will reflect the design of the “as built” System developed during the Build Phase.
	Test Strategy	The updated Test Strategy will reflect the approach agreed between the Customer, Contractor and Systems Integrator to implement IMS for Release 1.
	Project Management Plan	The updated Project Management Plan will reflect lessons learnt during Release 1, as well as revision in the approach to project management agreed between the Parties during the Build Phase.
	RACI	The updated RACI shall reflect additional Services and Deliverables identified for Release 1.
	Technology Environment Management Strategy	The updated Technology Environment Management Strategy will reflect the lessons learnt during Release 1, as well as revision in the approach to environment management agreed between the Parties during the Build Phase.
	Data Technical Analysis Output (DTAO)	The Updated Data Technical Analysis Output (DTAO) will reflect the “as built” System as defined during the Build Phase.
	Data management Plan	The updated Data Management Plan will reflect the design of the “as built” System developed during the Build Phase.
	Technology Communications Plan	The updated Technology Communications Plan will reflect lessons learnt during Release 1, as well as revision in the approach to project communications agreed between the Parties during the Build Phase.

New Build Deliverables

7.4.3 The Contractor must, in collaboration with the Systems Integrator, supply the following Deliverables as part of the Build Phase.

#	Deliverable	Description
	Technology Implementation Plan	The Contractor will contribute to the development of the Technology Implementation Plan being developed by the Systems Integrator. The Contractor shall base its response on the Technology Implementation Template agreed between the Parties during Detailed Design. The Technology Implementation Plan will detail and schedule the activities to deploy REM 2016.R1 and REM Mobile 2016.R1 into the Customer Environment. It must additionally address training,

#	Deliverable	Description
		development of, and installation of the IMS into the Customer Environment, as well as handover to the Customer from the Contractor, Go Live and roll back (from the technology perspective).
	Interface Documentation for SIRI (REM 2016.R1)	The Contractor will develop the REM SIRI SX Interface Documentation that includes: a. detailed mapping documentation of REM Data Model to SIRI SX Data Model; b. XML Schema Definition (XSD) for REM Incident SIRI extension; c. architecture overview / data flow diagram; d. description of configuration options for SIRI SX REM Server module; e. description of configuration options for REM DMC; and f. SIRI SX message samples. The Contractor will collaborate with the Systems Integrator to ensure the Systems Integrator interface documentation aligns with the interface documentation developed by the Contractor.
	Shadow Data Base Documentation	The Contractor will develop the Shadow Data Base Documentation that includes the description of the Functional Data Model including: a. master data, for example: i. users/roles; ii. contacts, occupational groups; iii. responsibility model; and iv. location configuration (location, route, route section). b. transactional data, for example: i. incidents; ii. operational consequences; and iii. tasks.
	Interface Documentation for Notification Functionality (REM 2016.R1)	The Contractor will develop the Interface Documentation for Notification Functionality that shall include: a. restful interface specification comprising: i. URL scheme and parameter specification; ii. specification of authentication mechanism; and iii. interface versioning specification; b. XML Schema Definition (XSD) for service request/response messages; c. HTTP code specification for request/response messages; and d. request/response messages samples.
	Documentation of the REM Data Model (REM 2016.R1)	The Contractor will develop the Documentation of the REM Data Model that shall include: a. ERD; b. Detailed entity documentation (column names, data

#	Deliverable	Description
		types); c. Common attributes for: i. all data types (e.g. deactivated by, deactivated_ts, optlocking); ii. versionised REM Master Data (e.g. version_id, valid_from, valid_to); iii. imported REM Master Data (e.g. valid_from, valid_from, valid_to); and iv. data versioning principles
	User Manual for Emergency Management Client (EMC) (REM 2016.R1)	The Contractor shall develop the User Manual for Emergency Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the EMC.
	User Manual for Data Management Client (DMC) (REM 2016.R1)	The Contractor shall develop the User Manual for Data Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the DMC.
	User Manual for Web Portal (REM 2016.R1)	The Contractor shall develop the User Manual for Web Portal that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the Web Portal.
	User Manual for REM Mobile (REM Mobile 2016.R1)	The Contractor shall develop the User Manual for REM Mobile 2016.R1 that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the mobile application.
	IMS (REM 2016.R1) Licensed Software	The Parties acknowledge the Licensed Software was a Deliverable supplied in the Initial Implementation (Release 1) Phase of the Detailed Design Contract.
	Licensed Software (REM Mobile 2016.R1)	The Contractor delivered the REM Mobile 2016.R1 Licensed Software to the Customer prior to 31 May 2016. **Note:** The Parties acknowledge the Licensed Software was a Deliverable supplied in the Initial Implementation (Release 1) Phase of the Detailed Design Contract.
	System Test Summary Report (2016.R1)	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results in general composition contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; and iii. deviations from the plan; c. Defect summary

#	Deliverable	Description
	REM Mobile Software Update (QR Code deployment) (2016.R1)	Customisation of REM Mobile 2016.R1 to enable configuration by QR code as defined in the REM Technical Infrastructure Design_NGIS v05 document.
	Configuration Process Documentation (2016.R1)	Documentation including details regarding the QR code functionality and how to change a configuration.
	Deployment Process Documentation (2016.R1)	Documentation of the required steps to configure the application (*.ipa file) in Hockey and deployment of REM Mobile 2016.R1 onto Customer iPhones with the use of Hockey.
	Hand-Over to Support Documentation (handover of non-production processes & procedures) (2016.R1)	The Hand-Over to Support Documentation covers all necessary information for the non-production mobile deployment services to be taken over by the Customer. A one day hands-on handover training.
	Update of REM Mobile Functional Specification (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
	Update of REM Mobile Test Objective Matrix (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
	Update of REM Mobile User Manual (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
	Update of Requirements Traceability Matrix (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
	Update of GAP Analysis (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
	REM System/Software Delivery (REM Release 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery REM Release 2016.R2.

#	Deliverable	Description
	REM System/Software Delivery (REM Mobile 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM Mobile as defined for Software Delivery REM Mobile 2016.R2.
	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	Contractor will Update the GAP Analysis for REM and REM Mobile Release 2016.R2 The GAP Analysis (REM and REM Mobile 2016.R2) shall be based on the DTBRS to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase. The GAP Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.
	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	Contractor will Update the REM and REM Mobile Release 2016.R2 Functional Specification document. The Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS. Functional specifications relate to the following: a. Function involving user interaction and its user interface; and b. Function which is unattended processing such as batch processing.
	Interface Documentation for SIRI (REM 2016.R2)	Contractor will update of the documentation to reflect changes implemented as a part of REM 2016.R2.
	Interface Documentation for Notification Functionality (REM 2016.R2)	Contractor will update of the documentation to reflect changes implemented as a part of REM 2016.R2.
	Update of Documentation of the REM Data Model	Contractor will update the Data Model Documentation to reflect changes implemented as a part of REM 2016.R2.
	Update of User Manual for Emergency	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.

#	Deliverable	Description
	Management Client (EMC) (REM 2016.R2)	
	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
	Requirements Traceability Matrix for REM 2016.R2	The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for REM 2016.R2 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases.
	Test Summary Report for System Test (REM Release 2016.R2)	Contractor will provide a summary of results from the COTS product vendor System Testing for REM 2016.R2 including a list of observations and defects in accordance with the COTS vendors' standard documentation.
	Test Summary Report for System Test (REM Mobile 2016.R2)	Contractor will provide a summary of results from the COTS product vendor System Testing for REM Mobile 2016.R2 including a list of observations and defects in accordance with the COTS vendors' standard documentation.

7.5 Exit Criteria

#	Criterion	Description
	Environment	For each environment type (as described in the TEMS and Environment Specification), the Customer has provisioned and set up the necessary environment to enable the relevant tests to commence.
	Licensed Software	The Contractor has delivered the Licensed Software to the Customer accompanied by the Systems Test Summary Report.
	REM installation	The Contractor has installed the Licensed Software in the relevant Customer Environment for SAT.
	Testing Criteria	The Parties have developed the testing plans and criteria relevant for the testing phase.

#	Criterion	Description
	Acceptance of Deliverables	The Customer has accepted the Deliverables relevant for the Build Phase and, to the extent that it is responsible, the Data Phase.
	Configuration	The Licensed Software has been configured to the extent required by the Customer to enable the Parties to enter SAT.
	Data Base	The Systems Integrator has populated the Database with sufficient data to enable testing to commence.

8 Data Phase

8.1 Overview

8.1.1 The following Data Management services are a subset of the Build Phase and were Delivered during the Initial Implementation (Release 1) Phase of the Detailed Design Contract:

a) Data Management as set out in section 8.3 below;

b) Data Profiling as set out in section 8.3.1 below; and

c) Data Configuration as set out in section 8.3.2 below.

This section has been retained, as additional data analysis may be required for Release 3.

8.1.2 The Services described below are predominately performed by the Systems Integrator, in conjunction with the Customer. However, the Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are supplied and are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

8.2 Entry Criteria

8.2.1 The Entry Criteria for the Data Phase are specified in the table below:

#	Criterion	Description
	Data Profiling	a. The Customer has established the data profiling team consisting of Customer and Systems Integrator personnel to identify sources of data within the Customer Environment to enable IMS to achieve its Functional Requirements (**Data Profiling Team**); and b. To the extent practicable, the Customer's data repositories have been identified and access granted to the Data Profiling Team.
	Configuration Requirements	a. The Customer has established a data configuration team consisting of Customer and Systems Integrator personnel to configure the Data compiled by the Data Profiling Team in order to ensure the data is in a format compatible with the Licensed Software; and b. The Customer has compiled the necessary data to enable the Contractor and Systems Integrator to commence the configuration.

8.3 Services

Data Management Services

#	Service	Description
	Data Cleansing and Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to perform Data Cleansing as set out in Module 9. For the avoidance of doubt, the majority of the Data Cleansing work will be performed by the Systems Integrator and Customer and the Contractor will perform a supporting role.
	Data Management Planning	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator to undertake preparatory and administrative work in respect of the Data Cleansing and Data Analysis. The Contactor's input for this Service will be minimal as the technical analysis, review of inputs, defining the scope the work, agreement on approach (including timing), initiation of stakeholder groups, creation of templates, and establishment of tools and access to systems will be the Systems Integrator and Customer's responsibility.

Data Profiling Services

8.3.1 The Services described below have been discharged during the Detailed Design Contract and are here for historical purposes.

#	Service	Description
	Planning/ management	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to undertake the following planning and management of the Data Profiling services: a. planning the Data Profiling services including deployment, training and support; b. management of the configuration team who are responsible for converting the raw data into a format that can be used by IMS; and c. reporting to senior management.
	Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to undertake the following Data Analysis activities of the Data Profiling services: a. liaison with the Customer's business, technical and ROC stakeholders; and b. development of data configuration requirements and design documentation for use in conjunction with the Licensed Software.

#	Service	Description
	Architecture	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to undertake the following Architectural activities of the Data Profiling services: a. define the technical architecture; and b. define the data architecture.
	Programming	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to define what Oracle PL/SQL programming is required for Data Profiling services.
	Testing	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to perform Unit Testing and System Testing of the programmed work related to the Data Profiling services.
	Training	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to undertake training required by the Customer as a result of the Data Profiling services.
	Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to support the Data Profiling services. This may require providing timely advice to the Systems Integrator's lead and technical analyst and programmers.

Data Configuration of REM Services

8.3.2 The Services described below have been discharged during the Detailed Design Contract and are here for historical purposes.

#	Service	Description
	Initial Data Load and Configuration	The Contractor shall provide technical advice to enable the Systems Integrator to undertake the Initial Data Load and Configuration of the Data. The Systems Integrator's scope for the Service extends to importing Customer supplied data into a clean REM system environment: a. clarification of data structure specified in the XLS template; b. dry-run of the provided master data XLS template on the relevant development system; c. single import of the XLS template to a database on the Customer Environment (Clean Environment); and d. initial Configuration using loaded data. The Contractor's assistance will be limited to providing: (i) technical input as well as providing hands-on training as required to the nominated Systems Integrator resource; and (ii) support of one data load.

#	Service	Description
	Configuration Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator with the loading of additional data and modifications and additions to the configured data.

8.4 Exit Criteria

8.4.1 Exit Criteria is as detailed in point 5, 6 and 7 of the Build Phase Exit Criteria set out in section 7.5 above.

9 Testing Phase

9.1 Overview

9.1.1 The purpose of the Testing Phase is to ensure the Licensed Software satisfies the Customer's Requirements, as well as interoperates with the TIBCO middleware and the Customer Environment.

9.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Testing Phase are supplied and completed;

b) testing performed by the Contractor in the Systems Test environments are documented as being fit for purpose when the Licensed Software is delivered to the Customer;

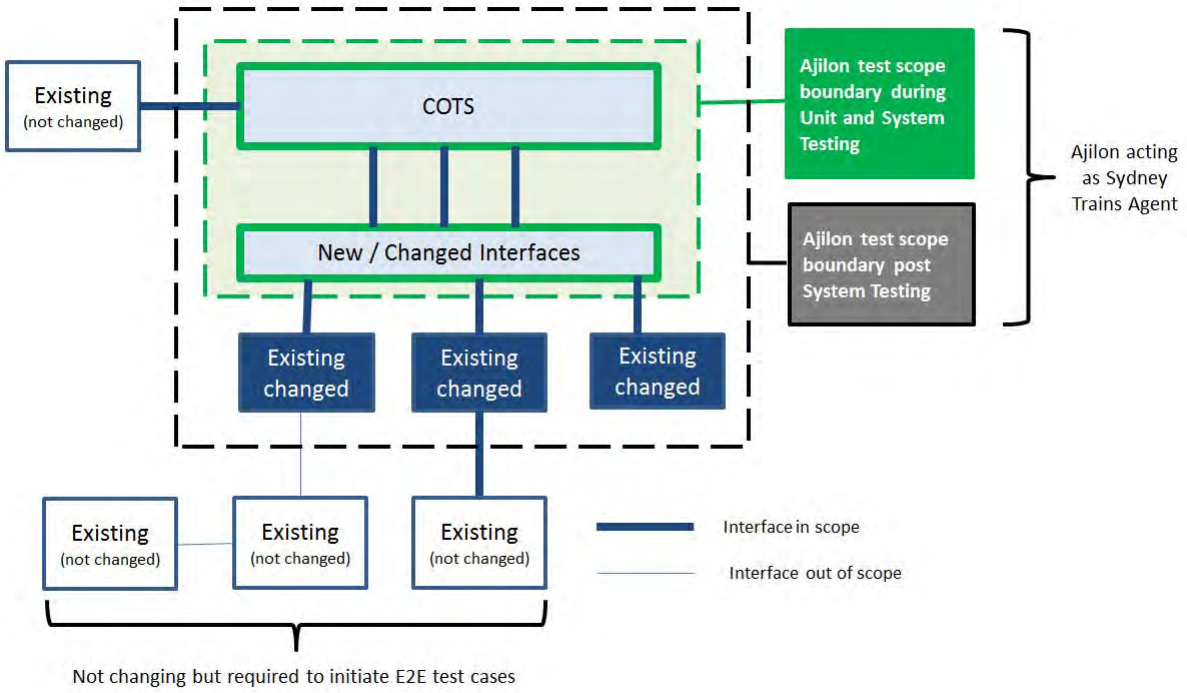
c) the Contractor demonstrates that the Licensed Software has been successfully tested in the Customer's relevant environment for SAT;

d) it provides appropriately skilled resources to assist the Systems Integrator and Customer during all other Tests contemplated in this Section 9; and

e) all Deliverables that it is obliged to supply under the Testing Phase are accepted by the Customer, on or before the relevant date(s) specified in the Project Plan.

9.2 Scope and Responsibilities

9.2.1 The following depicts the scope of the ROC Technology Testing and the responsibilities of each Party.



In the context of the above diagram, COTS refers to the Contractor and delivery of the Licensed Software as integrated into the TIBCO middleware (by the Systems Integrator) and the Customer Environment.

9.3 Entry Criteria

9.3.1 The Entry Criteria for the Testing Phase is specified in the table below. For the avoidance of doubt, the activities described below are repeatable at the commencement of each separate Test Phase.

#	Criterion	Description
	Licensed Software is ready for SAT	a. The relevant test environment (as described in the TEMS as Schedule 2 of this Customer Contract (Agreement Documents)) has been set up and is available to commence testing; b. Verification by the Contractor that the Licensed Software has been installed in the Customer Environment (not applicable for REM Mobile 2016.R1); c. System testing of the Licensed Software has successfully met its exit criteria as demonstrated by the System Test Summary Report; d. Test Data has been imported in to the relevant test environment(s) by the Systems Integrator for either the preferred option or alternative option described below, as determined by the Customer: i. The preferred option is that: A. relevant Customer Master Data has been supplied and loaded into the test environment; and B. the Master Data has been configured by the

		Configuration Team in line with the Customer's business processes; ii. The alternative option is that: A. sample Master Data has been provided by the Contractor as agreed between the Parties; and B. sample business configuration has been provided by the Contractor; e. System Test Plan has been accepted by the Customer.

9.4 Services

9.4.1 The following Services will be performed by the Contractor either in a lead capacity, as a contributor to Services performed by the Systems Integrator, or in consultation with the Systems Integrator or Key Contractors.

#	Service	Description
	SAT Test Phase, REM Licensed Software	The Contractor will perform SAT testing of the Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 9.5 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.
	Test Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator provide technical assistance and advice, to support the Systems Integrator and Customer to deliver the following tests. This applies to all test phases including Cross Stream and Security testing. a. SIT Test Phase b. UAT Test Phase (Program and Business) c. Load and Performance Test Phase d. Operational Acceptance Testing, Test Phase e. ERM Regression Testing (**Note:** Not applicable for Release 1) f. Security and Penetration Testing and g. Cross Stream Testing. Test support by the Contractor is limited to Defect triage, Defect rectification, progression and regression testing of fixes affecting the Licensed Software.

#	Service	Description
	SAT Test Phase, REM 2016.R2 Licensed Software	The Contractor will perform SAT testing of the REM 2016.R2 Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 9.5 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.

9.5 SAT Deliverables

9.5.1 The Contractor shall deliver the following Deliverables.

Deliverable	Description
SAT Test Objective Matrix (2016.R1)	A table demonstrating proposed test coverage. Test objectives state what is to be tested and are derived from the requirements and depend on the scope of the test phase.
SAT Test Cases (2016.R1)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.
SAT Test Summary Report (2016.R1)	The SAT Test Summary Report provides a summary and evaluation of the test phase based on objective data and a recommendation to move to the next stage of testing or to execute further tests in the current test phase based on results of the SAT Test. In general the SAT Test Summary Report contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; d. Recommendations to move to the next stage or to execute further tests based on results.

Deliverable	Description
System Test Plan	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to prepare the System Test Plan. The System Test Plan is an outcome of the planning process. It ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the solution will support the Customer's business and stakeholder requirements
SAT Test Objective Matrix (2016.R2)	A table demonstrating proposed test coverage. Test objectives state what is to be tested. Test objectives are derived from the requirements and depend on the scope of the test phase.
SAT Test Cases (2016.R2)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement.
SAT Test Summary Report (2016.R2)	The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.

9.6 Other Test Deliverables

9.6.1 The following are Deliverables to be developed by the Systems Integrator or Customer that may require assistance and input from the Contractor. The expectation is that the Contractor's input into these deliverables will be minimal.

9.6.2 One set of Deliverables will be created for each of the following Test Phases:

a) System Testing for TIBCO and other interfaces;

b) SIT Test;

c) Load and Performance Testing;

d) User Acceptance Testing;

e) Operational Acceptance Testing;

f) Security and Penetration Testing; and

g) Cross Stream Testing.

Deliverable	Description
Test Plan	The Test Plan ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the Licensed Software will support the Customer's business and stakeholder requirements.
Test Objective Matrix (TOM)	The TOM is a table demonstrating proposed test coverage. Test Objectives state what is to be tested and are derived from the business and functional requirements and depend on the scope of the test phase.

Deliverable	Description
Test Cases	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the test cases is to state how the testing will be implemented during testing and are based on the TOM.
Test Summary Report	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results In general the Test Summary Report must contain, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; and iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; Recommendations to move to the next stage or to execute further tests based on results.

9.7 Rollback option

9.8 The Contractor represents ,that REM2016.R2 is a minor upgrade to REM2016.R1.

9.9 The Customer and the Contractor acknowledge and agree that there will only be a short period of time in which to test REM2016.R2. If any issues arise during the testing of REM2016.R2 that, in the opinion of the Customer, can be isolated and that do not otherwise affect the operation of the IMS, both the Customer and the Contractor will attempt to resolve those issues to the satisfaction of the Customer.

9.10 If, any issues arise during the testing of REM2016.R2 that cannot be resolved to the satisfaction of the Customer, the Customer may, in its absolute discretion, elect to proceed with REM2016.R1 instead of REM2016.R2 in which case the Contractor will remove REM2016.R2 and instead deploy REM2016.R1 in accordance with the Project Schedule..

9.11 If the decision is made to proceed with REM2016.R1 rather than REM2016.R2:

9.11.1 the Customer and the Contractor will work, in good faith, towards developing a Change Request to cover the additional work required to incorporate REM2016.R2 at a later point in time; and

9.11.2 the Customer will not consider the failure of REM2016.R2 to be a Defect in the event it decides to proceed with REM2016.R1 instead of REM2016.R2.

9.12 Defect Severity Definitions

9.12.1 The following Defect severity definitions shall apply for all Test Phases, excluding Systems Testing.

Severity 1

Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists.

Examples of Severity 1 Defects include:

a) safety issues;

b) REM or a core component of REM is inoperable.

The Customer will not take Severity 1 Defects into the next Test Phase or to the Production Environment.

Severity 2

High Impact – Assigned to major errors. Some key REM functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality, but the Defect must be resolved before the component can be migrated to the next Test Phase or to Production Environment.

Examples of severity 2 Defects include:

a) the REM or a component of REM is operable however one or more functions do not work according to the Functional Specifications or have not been delivered and no acceptable workarounds exist;

b) any issue with data accuracy or integrity which may cause confusion among the Customer end-user community.

the Customer would not usually consider taking Severity 2 Defects into the next test phase or to the Production Environment unless there were exceptional circumstances. The Customer would need to have understood and accepted the risk/impact via approval of the TSR. There is an expectation that any Severity 2 Defects would be resolved by the next release of the Licensed Software.

Severity 3

Medium Impact – Assigned to minor errors. Some functionality does not conform to the Functional Specifications or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact on the Customer's end users. Testing can continue and the component can be migrated to the next test phase or to the Production Environment providing exit criteria are met. Examples of severity 3 Defects include REM or an REM component is operable however one or more functions do not work according to their Functional Specifications or have not been delivered and acceptable workarounds exist.

The Customer may consider (at its sole discretion) taking a small number of Severity 3 Defects into the next test phase or the Production Environment provided the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the System. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

Severity 4

Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on the Customer end users or the System. Examples of severity 4 Defects include:

a) misspelled (but not misleading) text;

b) inconsistent fonts; or

c) poor grammar.

The Customer may consider (at its sole discretion) taking a small number of Severity 4 Defects into the next test phase or the Production Environment providing the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the ROC program. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

9.13 SAT Exit Criteria:

Deliverable	Description
Test Cases	All test cases have been executed and the outcome recorded in the Contractor's Test Management Tool (**TMT**). An explanation has been provided by the Contractor to the Customer for any test case which has not been executed by the Contractor. The Parties acknowledge and agree the TMT used by the Contractor will be Jama, as compared to HP ALM used by the Systems Integrator and Customer.
Recording Defects	All Defects identified during the test phase have been recorded in the Defect Management Tool (DMT) and are available for review. The Parties acknowledge and agree the DMT used by the Contractor will be ITSM, as compared to HP ALM used by the Systems Integrator and Customer.
Severity 1 / Severity 2 Defects	No Severity 1 or Severity 2 Defects outstanding.
Severity 3 / Severity 4 Defects	An agreed action plan is in place to address outstanding Severity 3 and Severity 4 Defects, including target resolution time frame.
Defect Acceptance	The number of outstanding Severity 3 and Severity 4 Defects and the cumulative impact of these Defects on REM must be accepted by the Customer. Once all test exit criteria for the test phase have been met, the Contractor must produce a TSR to demonstrate the outcome of the testing phase. Where exit criteria have not been met, the test phase shall continue until exit criteria has been met.
Defect Deviation	Any deviation from the agreed exit criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management.

10 Deployment (Release 1) Phase

10.1 Overview

10.1.1 The Objectives for these Services are that:

a) the Licensed Software is deployed into the relevant test or Production Environment;

b) deployments into the Customer relevant environments are managed so that any disruption to the environments that can be avoided is avoided, or where avoidance is not possible, kept to a minimum;

c) deployments are managed in accordance with the Customer's Enterprise Release Framework and Change Management process.

This section encompasses the Services required to confirm the readiness of REM 2016.R1 and REM Mobile 2016.R1 for deployment into the relevant test or Production Environment.

10.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are accepted by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

10.2 Entry Criteria

10.2.1 The Entry Criteria for the Deployment (Release 1) Phase are specified in the table below:

#	Criterion	Description
	Licensed Software	The Licensed Software has been received by the Customer from the Contractor.
	Documentation	The Contractor has provided details of the software and hardware configurations required to enable the Licensed Software to be tested in the relevant environments (as described in the TEMS).
	Environments	The Customer has set up the following environments in accordance with the Non Functional Specification and as described in the TEMS: a. REM Configuration; b. REM Demo; c. Development; d. System Test; e. SIT; f. UAT; g. Pre-PROD; h. PROD; i. Training; and j. Disaster Recovery*. * Out of scope for the Contractor's Services (the **Non Production Environment**).

10.3 Services

10.3.1 The Contractor will provide a Systems Administrator to provide the following Services for each Customer Non Production Environment (as defined in section 10.2.1). Unless otherwise agreed between the Parties, the Systems Administrator's role concludes on 10 December 2016 that is the scheduled Release 1 Technical Go Live Date.

10.3.2 The Systems Administrator will perform the Services described in the table below:

Service	Description
Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment. a. REM Incident Management software; and b. additional necessary software packages.
System Level Configuration	Configure REM application on system level - various configuration and start up files.

Service	Description
Database Set Up	Perform Application related database setups: a. including setup of database instances; b. setup of database users; c. setup of schemas; and d. setup of Oracle database recovery and backup procedures (optional, depending on system operation model).
Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. as preparation for the production environment; and c. for debugging and Defect reproducing reasons.
Schema Updates	Perform Database Schema Updates, as required.
Monitoring Tools	Installation and configuration of monitoring tools according to Customer standards.
Manage Users	Setup, manage and track users and associated access levels.
Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations.
Sanity Testing	Perform basic sanity testing of the integration and configuration
Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.

Service	Description
Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. creation of Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality); and vi. filing an error report in the Contractor's Defect Reporting Tool ITMS.
Production Support	The Contractor will provide support after REM Goes Live in the Production Environment on request from the Systems Integrator or the Customer. Unless otherwise agreed, post-production support will be priced on the T&M Rates in the PIPP.
Pre-Production and Production	
Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment. a. REM Incident Management software; and b. additional necessary software packages related to the REM product but not including third party applications.
System Level Configuration	Configure REM application on system level - various configuration and start up files. Note: Appropriate access to the systems has to be granted by the customer.
Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. for debugging and Defect reproducing reasons.
Manage Users	Setup, manage and track users and associated access levels.
Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations.
Sanity Testing	Perform basic sanity testing of the integration and configuration

Service	Description
Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.
Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. adding to the Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality);

10.4 Responsibilities

10.4.1 The Customer will:

a) establish and disseminate to the Contractor and Systems Integrator, an ERM framework to permit seamless deployment;

b) provide timely notification to the Customer's ERM team to schedule the REM deployment in accordance with the ERM framework; and

c) set up and maintain operational test environments that are functionally equivalent to the Production Environment where the Systems Integrator or Contractor needs such operational test environments to fix Defects and perform regression testing.

10.5 Deliverables

10.5.1 The Contractor shall provide, or contribute to the following Deliverables developed by the Systems Integrator.

#	Deliverable	Description

#	Deliverable	Description
	Handover Plan	The Hand Over Plan is a Systems Integrator Deliverable outlining: a. Technical documents required to support REM that includes as built specifications documents etc; b. Training Session(s) to be provided by the Contractor or Systems Integrator (as required) to enable proficiency in the use of REM, as well as basic support, including: i. number of students; ii. duration of course; iii. outline of content; and iv. key dates. **Note**: The Handover Plan relates to REM only and excludes the Customer Environment.
	Post Implementation Verification Report	The Contractor shall, in conjunction with the Systems Integrator, provide any required assistance to the Customer to develop the Post Implementation Verification Report which outlines: a. the issues that arose during the Deployment (Release 1) Phase that necessitate recording; b. lessons learned from the Deployment (Release 1) Phase that may be used to mitigate further problems or repeated to ensure seamless delivery of services; and c. follow-up actions including detailing any deferred scope.
	Production and Pre-Production Installation Run-Sheets	REM Pre-Prod and Prod installation Run Sheets based on ROC Technology Implementation Plan template. The Pre-Prod Run sheet will be created in parallel with the first application installation of the Pre-Prod environment.

11 Training

11.1 Overview

11.1.1 The Contractor shall provide the following training to enable the Customer to use, operate, administer and maintain REM.

11.2 Services

11.2.1 The Contractor shall deliver the following Training Services to the Customer.

Item	Service	Description
	Technical System “Train the Trainer” Training	Provision of Technical System “Train the Trainer” Training including the training materials. This training is intended for staff responsible for training the Customer staff required to operate the IMS. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functional and operational principle of an incident management system; b. explain the functionality of the IMS; c. explain the typical use cases and associated workflows; d. perform operative incident management using the IMS at an operator place independently; e. have an overview of the system actors, support structure and supplementary application documentation; and f. explain, teach and demonstrate the IMS operational content in the Customer’s learning environment. This Service includes: a. design of “Train the Trainer” training course to meet the aims outlined above; b. provision of all training materials; and c. provision of the “Train the Trainer” training course to the Customer Personnel (3 training courses, of 3 continuous days). The Customer will provide the training facilities required to conduct the courses.

Item	Service	Description
	System Administration training	Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of REM. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. The aim of the course is to provide attendees with training to enable the attendees to: a. identify components of the REM 2016.R1 and assign them to system structures; b. explain the functionality and purpose of the individual components of REM 2016.R1, including system interfaces; c. interpret operational and technical messages of the REM 2016.R1 and analyse causes; d. carry out maintenance working steps for administration of the REM 2016.R1 components according to the system administration manual; e. carry out software update procedures for the REM 2016.R1; f. name, readout and interpret relevant log files of the REM 2016.R1; g. assess the technical and operational effects of these actions; and h. provide second level support requirements.
	Application Administration Training	The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of REM. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functionality of REM b. explain the functionality of the REM DMC; c. explain the functional data structure of REM; d. maintain REM configuration data; e. configure the responsibility model; f. configure the track network; g. configure workflows; and h. carry out user, role and group administration. **Note:** Application Administration Training was delivered under the Detailed Design Contract.

11.3 Deliverables

11.3.1 The Contractor shall provide the following Deliverables for the training courses it will deliver to the Customer:

#	Deliverable	Description

#	Deliverable	Description
	Training Material Technical System Train the Trainer Training	REM Training consisting of trainer PowerPoint slide pack
	Training Material System Administration	Contractor is responsible for creating the training material for System Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual (delivered under Detailed Design agreement).

12 Program Maintenance and Support – Release 1

12.1 Overview

12.1.1 Program Maintenance and Support Services (Recurring Services) for Release 1 commence when Release 1 Goes Live in the Production Environment and concludes when Release 3 Goes Live in the Production Environment.

As at the Commencement Date, the Customer's requirements for the Recurring Services have yet to be determined. As a consequence, the Parties agree the Customer's future requirements for the Recurring Services will be based on the following documents:

a) Module 5 Software Support Services

b) Module 5 Order Form

c) Support_Plan_2014_00754_R20_V10 provided by the Contractor in their RFQ Response

d) Draft Annexure C to the General Order Form Service Level Agreement 24 June 2016

12.1.2 The Customer's Recurring Services shall be negotiated between the Parties during the Build Phase. Any changes to the Contractor's Recurring Services charges, as detailed in section 12, shall be negotiated between the Parties and amended via Contract Variation.

13 Maintenance and Support – Release 3

13.1 Overview

13.1.1 Maintenance and Support Services for Release 3 commence when Release 3 Goes Live in the Production Environment.

13.1.2 At the time of contract execution, the Customer's requirements for Recurring Services have yet to be determined. As a consequence, the Parties agree the Customer's future requirements for Recurring Services will be based on the following documents:

a) Support_Plan_2014_00754_R20_V10 provided by the Contractor in their RFQ Response

b) Draft Service Level Agreement at Annexure C to the General Order Form

c) Module 5 Software Support Services

d) Module 5 Order Form

13.1.3 Customer Requirements as at the Commencement Date are set out in the baseline Recurring Services scope are detailed in the 'Support Plan' listed in Section 13.1.2a).

13.1.4 The Customer's Recurring Services shall be negotiated between the Parties during the Build Phase. Any changes to the Contractor's Recurring Services charges, as detailed in section 12 of the PIPP, shall be negotiated between the Parties and amended via Contract Variation.

14 Acceptance, Change Request and Assumptions

14.1 Acceptance

14.1.1 The Contractor must:

a) in collaboration with the Customer and Key Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Key Contractors (as required) to ensure that all Deliverables are fit for purpose and meet the agreed Acceptance Criteria.

14.1.2 The Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Build Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

14.1.3 Deliverables will be reviewed by the System Integrator acting as the Customer's nominee. Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with the Additional Conditions, the System Integrator will request the Customer's endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

14.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

a) Milestone Acceptance Forms must be signed in writing by the Contractor's Project Director and Customer's Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customer's delegate; notification by email of the endorsement is sufficient.

d) Contractor's Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) The Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of Defects (tracked in a

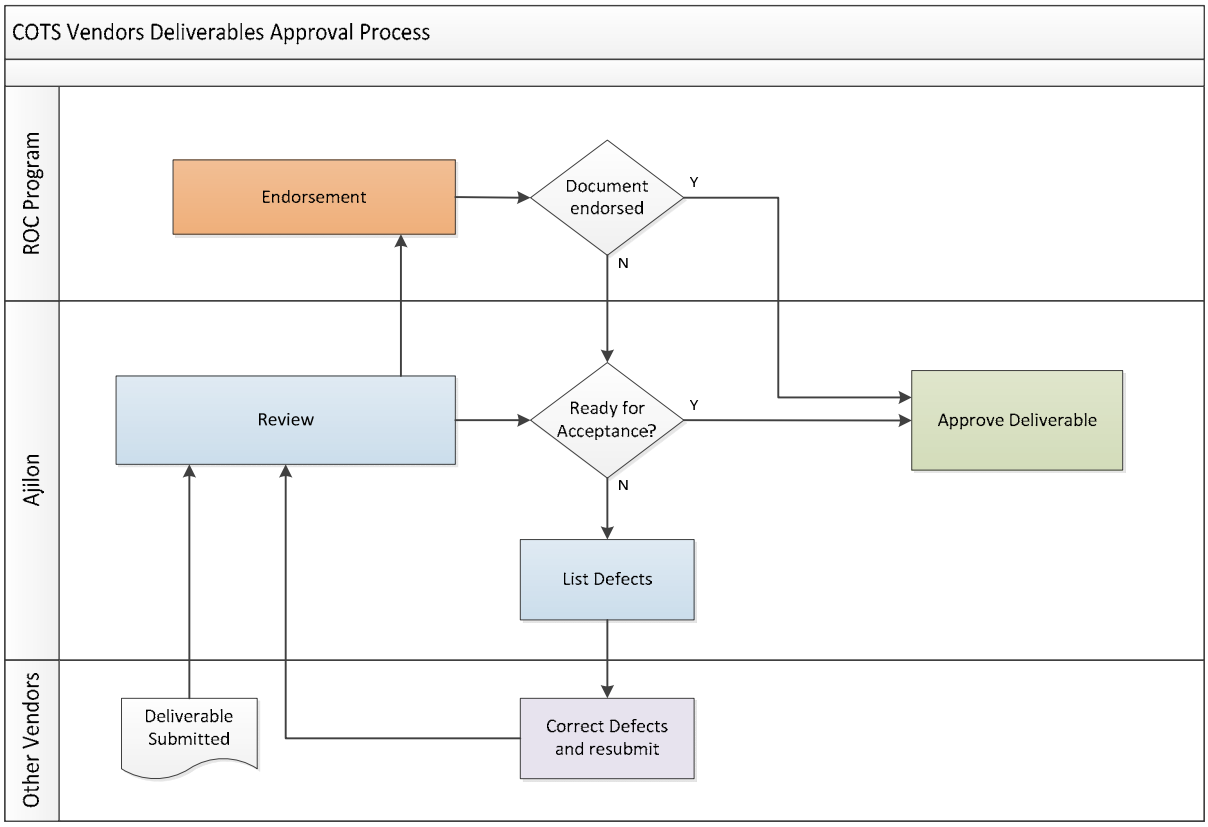
spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



14.1.5 The Contractor must supply the Deliverables which are part of the Customer Contract in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

14.1.6 The Contractor must ensure that the System described in the Detailed Design:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

14.1.7 Subject to section 14.1.6, the Customer (or its nominee) must review a Deliverable submitted during the Customer Contract in accordance with the Additional Conditions.

14.1.8 The Contractor agrees that any review, comment, approval, endorsement or election or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect the Services or Deliverables under this Customer Contract, including in respect of the Detailed Design;

b) does not limit or affect the provision of the Contractor's warranties or indemnities;

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

14.2 Change Request

14.2.1 If:

a) during the term of the Customer Contract, the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Requirements (**Variation**); and

b) that Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

14.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 14.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits a Deliverable,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Variation.

14.3 Not used

14.4 Summary Table of Deliverables and expected delivery dates

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Phase and documented in the associated draft Project Schedule)

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Detailed Design				
WBS 2	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 3	Release 1 Functional Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 4	Release 1 Non-Functional Design	Document	As specified in the draft	15 Business Days after delivery of the Deliverables as

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Project Schedule	specified in the Project Schedule.
WBS 5	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 6	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 7	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 8	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 9	Updated Implementation Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 10	Release 1 Implementation Plan (draft)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 11	Technology Test Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 12	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 13	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 14	Updated Release 1 Product Gap Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 15	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 16	Requirements Traceability Matrix for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 17	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 18	Operating Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 19	Draft recommended ROC organisation structure	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 20	Change Impact Analysis (Release 1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 21	Release 1 Training Needs Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1 Updated Detailed Design				
WBS 22	High Level Solution Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 23	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 25	Release 1 Non-Functional Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 26	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 27	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 28	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 29	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 32	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 33	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 35	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 36	Technology Environment Management Strategy	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
Release 1 New Deliverables				
WBS 37	Release 1 Technology Implementation Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 38	Interface Documentation for SIRI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 39	Shadow Data Base Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 40	Interface Documentation for Notification Functionality (REM)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 41	Documentation of the REM Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 42	User Manual for Emergency Management Client (EMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 43	User Manual for Data Management Client (DMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 44	User Manual for Web Portal	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 45	User Manual for REM Mobile 2016.R1	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 46	IMS (REM 2016.R1) Licensed Software	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 47	Licensed Software (REM Mobile 2016.R1)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
REM Mobile Non-Production Deployment				
51	REM Mobile Software Update (QR Code deployment)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
52	REM Mobile Configuration Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
53	REM Mobile Deployment Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
54	REM Mobile Hand-over to Support Documentation (handover of non-production processes & procedures)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
55	Update of REM Mobile Functional Specification (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
56	Update of REM Mobile Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
57	Update of REM Mobile User Manual (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
58	Update of Requirements Traceability Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
REM & REM Mobile 2016.R2				
	REM System/Software Delivery (REM Release 2016.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
	REM System/Software Delivery (REM Mobile 2016.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Update of Interface Documentation for SIRI (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Interface Documentation for Notification Functionality (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Update Documentation of the REM 2016.2 Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Update Requirements Traceability Matrix for REM 2016.R2	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
	Test Summary Report for System Test (REM Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
x	Test Summary Report for System Test (REM Mobile 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SAT Testing Deliverables				
WBS 66	SAT Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 67	SAT Test Cases (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 68	SAT Test Summary Report (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 69	SAT Test Objective Matrix (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 70	SAT Test Cases (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 71	SAT Test Summary Report (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
System Testing for TIBCO and Other Interfaces				
WBS 72	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 73	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 74	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 75	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SIT				
WBS 76	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 77	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 78	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 79	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Load and Performance Testing				
WBS 80	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 81	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 82	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 83	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
User Acceptance Testing				
WBS 84	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 85	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 86	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 87	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Deployment Deliverables				
WBS 88	Hand Over Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Training				
WBS 89	Train the Trainer Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 90	System Administration Train Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 91	Application Administration Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

14.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

14.6 Exclusions

Not applicable.

15 Implementation

15.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the Parties.

15.2 Implementation strategy

15.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

15.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Technology Implementation Strategy which is included in Schedule 2 of the Customer Contract (Agreement Documents).

16 Project Management

16.1 Advice and knowledge transfer

The Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

16.2 Contractor assistance

If requested, the Contractor must participate in all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Requirements are accurate and complete; and

b) the Contractor's proposed solution.

16.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

16.4 Risk management

16.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes delivery risks,

(**Issues Register**).

16.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

16.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 16.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the delivery risks.

16.4.4 The Contractor must report to the Customer:

a) any issues or risks (including any delivery risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the delivery risks, immediately on becoming aware of that change in status.

16.5 Cooperation with Key Contractors

16.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Key Contractors in relation to the Project;

b) without assuming any liability for the contents of an Key Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Key Contractors;

c) comply with all other requests of the Key Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Key Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to a Key Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this Section by the Contractor is accurate and to the extent possible, complete.

16.6 Communication with Key Contractors

16.6.1 The Contractor must not, without the Customer's prior written consent:

a) give a Key Contractor a direction or instruction which will or is likely to vary the Key Contractor's scope in relation to the Project;

b) give a Key Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Key Contractor in relation to the Project;

c) give a Key Contractor a direction or instruction which will or is likely to delay the time that the Key Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Key Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Key Contractor in relation to the Services or the Deliverables.

16.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and a Key Contractor, or between Key Contractors, in connection with the Project.

16.7 Disputes between the Contractor and Key Contractors

16.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with a Key Contractor by discussion and negotiation without the Customer's involvement.

16.7.2 Where the Contractor has notified the Customer under section 16.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

16.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

16.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

16.8 Reliance on Key Contractors' work

The Customer does not warrant the accuracy or correctness of any reports, plans, drawings, documents or information provided by Key Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such reports, plans, drawings, documents or information.

16.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

16.10 Delivery Address

The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

17 Customer Supplied Items (CSI) and Customer obligations

17.1 CSIs and obligations

17.1.1 Subject to section 17.2, the Contractor acknowledges that the Customer has provided the following CSI items :

a) Customer's Enterprise Release Framework and Change Management process

b) project scope (as documented in the architecture blueprint);

c) functional requirements (as provided in the RFP);

d) non-functional requirements (as provided in the RFP);

e) draft Implementation & Maintenance Phase PIPP

f) system security requirements;

g) data management strategy;

h) project concept and review;

i) architecture blueprint;

j) systems impacted (existing);

k) interface specifications (where available);

l) technical policies and standards;

m) draft Procure IT (the Customer Contract and this PIPP);

n) ROC organization structure;

o) ROC program high level roadmap;

p) draft ROC program test management framework;

q) current processes;

r) concept of operations;

s) Transformation and Change Requirements v4.1;

t) ROC Systems Assurance and Planning Framework documents; and

u) ROC Data Architecture High-Level Strategy.

17.1.2 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

17.1.3 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 17.1.1 and 17.2.

17.1.4 Any Customer Supplied Items which are needed by the Contractor but are not identified above may be provided by the Customer at its discretion and in accordance with the Customer Contract

17.2 CSI Facilities and Equipment

17.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data;

c) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required data has to be provided in the agreed format and validated; and

d) all necessary IT to enable the Contractor to discharge its obligations on site.

17.3 CSI verification

17.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

17.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

17.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

18 Personnel

18.1 The Contractor must ensure that each member of the Contractor's Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

18.2 Any of the Contractor's Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

18.3 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

18.4 Nothing in Appendix B affects the scope of the obligations of either party as described in this PIPP.

19 Subcontractors

19.1 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

20 Approval by the Customer

20.1 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with section 13 of the Additional Conditions .

20.2 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

21 Payment Plan

21.1 Contract Price

21.1.1 The Contract Price for the Contractor to undertake Release 1 of the ROC Program is [redacted](ex GST). This comprises:

a) Costs expended to date for a component of the Licensed Software, the Release 1 Detailed Design, as well as certain Build activities bought forward for Release 1. These were delivered under the Release 1 Detailed Design Contract and detailed in the Table 1 below; and

b) The remaining activities associated with the implementing the Licensed Software, as well as REM Support and detailed in Table 2 below

Table 1

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation and the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase			
The Services and Deliverables specified in sections 5 of this PIPP.	[redacted]		[redacted]
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase (Release 1) Phase until the end of November			
Travel Costs			
Customisation for ROC c. The majority of the customisation efforts can be deferred until 30 November 2015.			

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
d. Assumes that remaining customisation efforts will be ordered through the implementation contract until the deferred date.			
License component The REM IMS.	[redacted]		[redacted]
Initial Implementation CR1			
Customisation for ROC - Interface customisation including GAP Features			
On/Off-Site Personnel Effort until 1 December 2015 to 29 February 2016			
Travel Budget			
Initial Implementation CR2 – REM Mobile and System Administration			
Licensed Software Note: The REM Mobile Software Licences , are only 40% of the full licence price for the respective module due to the reduced functionality required by the Customer for Release 1			
Customisation			
Documentation Deliverables			
System Administration			
Initial Implementation CR3 – 2016.R2 and REM Mobile 2016.R Deployment Support			
Customisation of Licensed Software (REM & REM Mobile 2016.R2)			
On/Off-Site Personnel Efforts for REM & REM Mobile 2016.R2 efforts.			
Services and Deliverables for QR code functionality to support testing			
Sub-Total			
GST			
Total			

21.1.2 The remaining Contract Price payable under this Customer Contract has been calculated based on the milestones specified in the table below and represent the remaining Release 1 costs for the Services and Deliverables outlined in the PIPP. A breakdown of the Contract Price is as follows:

Table 2

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Implementation Contract			

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
On-site/Off-Site personnel efforts and costs required to fulfil the Services and Deliverables obligations under the Customer Contract from 01/03/2016 until 10/12/2016.	[redacted]	1	[redacted]
Remaining Licensed Software fee for Release 1			
Sub-Total			
GST			
Total			

21.1.3 The Contractor is to be paid for the items specified under 21.1.2 in accordance with the following milestones:

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
1.	Initial payment of 60% of [redacted] (Contract Value prior to Change Request 4) on execution of the Agreement Letter dated 19 August 2016 or Contract whichever occurs first.	[redacted]	1	[redacted]
2.	Milestone payment of 15% on 30 September 2016			
3.	Milestone payment of 15% on 30 November 2016			
4.	Final payment of 10% on AAD of Release 1 Licensed Software and Go-Live of the IMS which will only occur on execution of a Customer Contract for Support.			
	Sub-Total			
	GST			
	Total			

Time and Materials for Pre-Production and Production Support

Role	Hourly Rate (ex GST)	Estimate amount of hours	Total costs (ex GST)
System Engineer	[redacted]	80 hours	[redacted]

Hours worked by the Contractor will be recorded on an ongoing basis and without the written consent of the Customer, the total number of hours and the value of those hours worked must not exceed [redacted] (excluding GST). When the hours reach 80% of the number of hours outlined in the table above, the Contractor shall inform the Customer in writing and the Parties shall agree in writing on any further hours if required.

The Contractor shall provide the Customer with a timesheet for the activities performed by the System Engineer and provide a Correctly Rendered Tax Invoice on a monthly basis. The

Contractor shall be entitled to issue a tax invoice on the last day of each month for the month's efforts. Payment terms are 30 days from Correctly Rendered Tax Invoice.

Resource Rate Card

The following Resource Rate Card applies for Time and Material based work outside the current scope of this Customer Contract. The rates presented below are subject to escalation of 2.5% per annum (on 1 January) and are only valid for Release 1.

In addition to escalation, the rates for Functional Consultant (day rate Sydney), Business/Systems Analyst/Senior Support Engineer (day rate Sydney) and Developer (day rate place of employment) are subject to movement based on the one year forward rate of Raiffeisen Bank International. The rates will be adjusted according to the percentage change compared to the base rate of 1.4920 (08/08/2016) to the revised base rate measured on the 10th January.

Resource Categories	Description	Day Rate Sydney	Day Rate Place of Employment
Project Manager - Senior/Employees Based in Sydney	Senior Project Manager responsible and accountable for overseeing one or more Project Managers' activities - 7 years' experience minimum	[redacted]	[redacted]
Developer	Technical developer working on one or more delivery / workstreams in a Project - 3+ years' experience minimum		
Functional Consultant	Functional Consultant working on one or more functional streams in a project - 3 years' experience minimum		
Business/Systems Analyst/Senior Support Engineer	Analysis, high level and detailed business requirements for a number of areas - 5 years' experience minimum		
Flight	International		

21.2 Payment

21.2.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 21.1.3.

21.2.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

21.3 Termination for convenience

21.3.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with section 39 (Costs relating to a termination for convenience) of the Additional Conditions.

21.4 Liquidated Damages

21.4.1 Liquidated Damages are as described in the General Order Form.

22 Governance

22.1 Authorised Representatives

22.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Mark Pigot; and

b) the Contractor's Authorised Representative is Martin Rampl.

22.2 Management committee

22.2.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Mark Pigot;

b) Stefano Bianchini;

c) Jason Galer;

d) Imola Novak;

e) Martin Rampl;

f) Christian Dorner; and

g) Angela Birchall

22.2.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

22.3 Management committee function

22.3.1 The function that the management committee is to:

a) review and monitor progress under the Customer Contract; and

b) carry out any other functions stated in Item 16 of the General Order Form.

22.4 Management committee meetings

22.4.1 The management committee must meet no less than once a month during the Project at the times and locations specified by the Customer.

22.5 Management committee progress report

22.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 22.4, provide the Customer with a monthly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

i) minutes and actions from the last meeting;

ii) risks and issues;

iii) details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Updated Requirements

1. Detailed Technology Business Requirements Specification (Release 1 DTBRS for REM Release 2016.2 v2.2);
2. Architecture Specification (Release 1 Architecture Specification v5.0);
3. Functional Specification (version 6.0);
4. Non-Functional Design (version 6.0);
5. Integration Specification (version 5.0);
6. ROC-PMO-RG-0002 Updated Release 1 Product Gap Analysis V5.01;
7. Requirements Traceability Matrix (version 4.0);
8. Technology Environment Management Strategy (TEMS) (version 10.0);
9. Technology Test Strategy version 6.1;
10. RACI (version 2.00);
11. Project Communication Plan version 4.0;
12. Data Technical Analysis Outputs version 6.0;
13. Updated Project Management Plan version 4.0;
14. Implementation Strategy (Updated Technology Implementation Strategy version 3.0); and
15. High Level Solution Design version 3.0.

Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Angela Birchall	Project Manager	a. Overall successful performance of the project within schedule and budget; b. Overall project management activities (planning, organising, controlling); c. Participation and action item processing for Project Management related topics with the Customer and System Integrator; d. Production of Weekly Status Reports, including the Project Highlight Reports; e. Attending Management Committee Meetings; f. Managing the Contractor team on-site/off-site; g. Managing Change Requests; h. Risk management – DRICA; i. Facilitating cooperation with the Key Contractors; j. Management and execution of all Project related communication between the System Integrator, CNS and the Contractor (including alignment meetings and technical clarification)
Bjoern Brunner	Solution Architect	a. Participation and action item processing in workshops with the Customer and System Integrator; b. Solution design; c. Architectural consultancy; d. Master Data mapping support; e. Support of integration and integration validation.

Name	Role	Responsibility
Armin Steinwandter & Peter Hauk	Solution Consultant	a. Solution Consultance Support (Solution Consultant) ; b. Participation and action item processing in workshops with the Customer and System Integrator; c. Product & Solution consultancy; d. Data provisioning support; e. Data management and configuration support.
Bjoern Brunner	Requirements. & Test Manager	a. Co-ordination of all requirements, engineering and test activities for the Project; b. Preparation of all Acceptance Test activities.
Reinhard Sollböck	Project Manager CNS	a. CNS project management activities (including planning, organising and controlling) b. Management and execution of all Project related communication within CNS (including technical alignment meetings and technical clarification)
Robert Devide	Requirements Manager off-site	Requirements engineering for REM2016.R1development off-site
Monika Blassnig	Quality Manager	Quality assurance of the Project Deliverables as well as ensuring that the Configuration Management guidelines are known and met by the Project team.
Bruce Evans	System Engineer	a. Support of System Integrator's system administration activities for Demo, Dev, SAT, SIT, UAT, Training environments until handover to the Customer; b. Master Data Import / Export (on-site).
Monika Bassnig	Configuration Manager	Identification, direction and co-ordination of the Configuration Management activities.
Alexander Bruckner	Product SW Lead	Software configuration and development in response to the requirement specifications

Name	Role	Responsibility
Neha Rodey	Test Engineer	Support Test Manager (creating, performing test cases, test documentation)
Bruce Evans	System Engineer	System Installation / Integration
Alistair McGill	Account Manager	Responsible for customer relationship management
Martin Rampl	Commercial Manager	In charge of negotiating the contract and all modifications thereto on the part of the contractor
Swdorny Veliyath	Technical Trainer	Preparation and provision of system administrator and application administrator training.
Thomas Karl	Internal Project Sponsor Contractor	Accountable for the overall Project success towards the Contractor's executive board and participant of the ROC steering committee.
Reinhard Sollböck	Internal Project Sponsor CNS	Accountable for the success of the CNS project share towards the Contractor's executive board.

2 Customer roles and responsibilities

Name	Role	Responsibility
Mark Pigot	Technology Team Manager	Management of the Technology Team
Stefano Bianchini	Lead Architect	Oversight of Technical Design for ROC Program
Jason Galer	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Imola Novak	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
As required	Customer Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

_A2016.3 Schedule -
w ith ROC R1 testing (

ROC - R1 Ad hoc
schedule - V190816.

ROC Release 1 Schedule. Version 0.9 UPDATED Issued 15/08/2016

2016

A2016.3 | Current Timeline | RG2 | SIT Deploy & Sanity Test (4 Weeks) | SIT Execution (5 Weeks) | RG3 | UAT Deploy & Sanity Test | UAT (6 Weeks) | RG4 | Regression / PVT (4 Weeks) | 10-Dec Tech Deploy | 2-Jan-17 Tech Deploy - ENV/EAM (TBC)

Prod Code - Start Data Load

Regression Goes Live

A2016.3 | Updated Timeline | RG2 | SIT Deploy & Sanity Test (4 Weeks) | SIT Execution - 8 Aug - 30 Sept (7 Weeks) | RG3 | Functional & Sanity Test | UAT Window - 3 Oct - 11 Nov (5 Weeks) | RG4 REG (2 Weeks) | PVT (1 Wk) | 10-Dec Tech Deploy | 2-Jan-17 Tech Deploy - ENV/EAM (TBC)

Prod Code - Start Data Load

Regression Goes Live

one weeks effort - To Be confirmed with ERM which may provide a

Need to ensure environment stability during PVT as the overlap with CST may impact throughput / user

Plan A- CST 7 Nov to 25 Nov (3 weeks)

Plan B- CST 14 Nov to 25 Nov (1 weeks)

Orginal

SIT ALL ROLES | Stop ing and Shut e | UAT Program 3 roles | UAT Business 3 roles | ROC Gate 1 | Cross Stream 5 roles | PVT

UAT Program All other roles | ERM Regression ALL Roles

End SIT cycle 2 (Risk)

Non Functional Testing

CURRENT

V008

Changes due to late SAT start due to commerical issues CR12 CR12 not approved yet

Did not eventuate

Stop ing and Shut e | SAT Cycle 1 | SAT Cycle 2 | SIT Cycle 1A | SIT Cycle 1B | SIT Cycle 2 | SIT Cycle 3 | Stop ing and Shut e | ROC Gate 2

Delayed by 3 working

Additional reference data mapping testing with three

SAT reduced from 10 to 7 working days

SIT Cycle 1A reduced from 10 to 5

UAT Program 3 roles | UAT Program All other roles | Cross Stream The 3 roles used for R1.0 only | ERM Regression ALL Roles | PVT

Non Functional Testing | ROC Gate 3

Functional Automation (QTP)

Option 9 A

If commercial issue resolved by COB Friday 5/8

Compressed SAT Cycle 2

Work additional days (weekend) on SAT testing - A CR will be required - additional cost.

Some low priority test cases descoped (Moderate level of risk acceptance required)

Did not eventuate

Delayed by 10 working days

SAT reduced from 10 to 5 working days

SIT Cycle 1A reduced from 10 to 5

Hard Deadline due to ERM schedule

Current

Updated Option 9 B

If commercial issue resolved by COB Friday 12/8

Compressed SAT Cycle 2

Work additional days (weekend) on SAT Testing - A CR will be required - additional cost.

~~Some low priority test cases descoped~~ (Moderate level of risk acceptance required)

Delayed by 15 working days

IMMS and REM Mobile available

SIT / UAT Overlap - 7 day overlap (priority test cases only)

SAT reduced from 10 to 7 working days

SIT Cycle 1A and 1B merged into a single cycle 1

UAT details T&C

UAT Deploy and Shake

Updated Option 9 C

If commercial issue resolved by COB Friday 19/8

Compressed SAT Cycle 2 and Compressed SIT Testing - A CR will be required - additional cost.

~~Some low priority test cases descoped~~ (Moderate level of risk acceptance required)

Delayed by 20 working days

SAT reduced from 10 to 7 working days

SIT / UAT Overlap - 7 day overlap (priority test cases only)

SIT Cycle 1A and 1B merged into a single cycle 1

UAT details T&C

UAT Deploy and Shake

V007

Changes due to IMMS Late CR??

Did not eventuate

Now SIT Cycle 1A and 1B available until 13

Non Functional Testing

Functional Automation (QTP)

A very early draft. For discussion purposes only

REM 2016.2 planning Assumes Option 9B

Delayed by 15 working days

SAT reduced from 10 to 7 working days

REM 2016.2 Deploy and Shake

SAT 2016.2 C1

Go / No Go

Auto Functional regression

UAT 2016.1 Program Tranche 2

UAT 2016.2 Business Tranche1

ERM Regression ALL Roles

Cross Stream Tranche 1

If necessary rollback to 2016.1

Auto Functional scripting and execution on R2016.1

Performance scripting 2016.1 in ????

Performance Testing 2016.1 in Pre-Prod

Performance Testing 2016.2 in Pre-Prod

UAT 2016.2 Business Tranche2 in 2017 TBA

Option 9B (15 days SAT delay)

+

REM 2016.2

+

PCR15 to add 4th SIT cycle (pending approval)

Version 10

Issued 22nd Sep 2016

SIT Cycle 4 ??

Training ?

SAT 2016.2 C1

UAT 2016.1 Program Tranche 2

UAT 2016.2 Business Tranche1

Cross Stream Tranche 1 2016.2

If necessary rollback to 2016.1

Script Maint 2016.2

Update ?? 2016.2

Auto Functional execution on R2016.2

SAT (Options 9A, 9B and 9C)	Working days	Orginal FTEs	Working hours per day	Effective Working hours per day	Additional Weekend hours	People Hours	Test Cases de-scoped
l (2 weeks)	10	1	8	6		60	
v (1 week)	5	1	10	8	8	48	20.0%

SIT Options 9A and 9B no impact

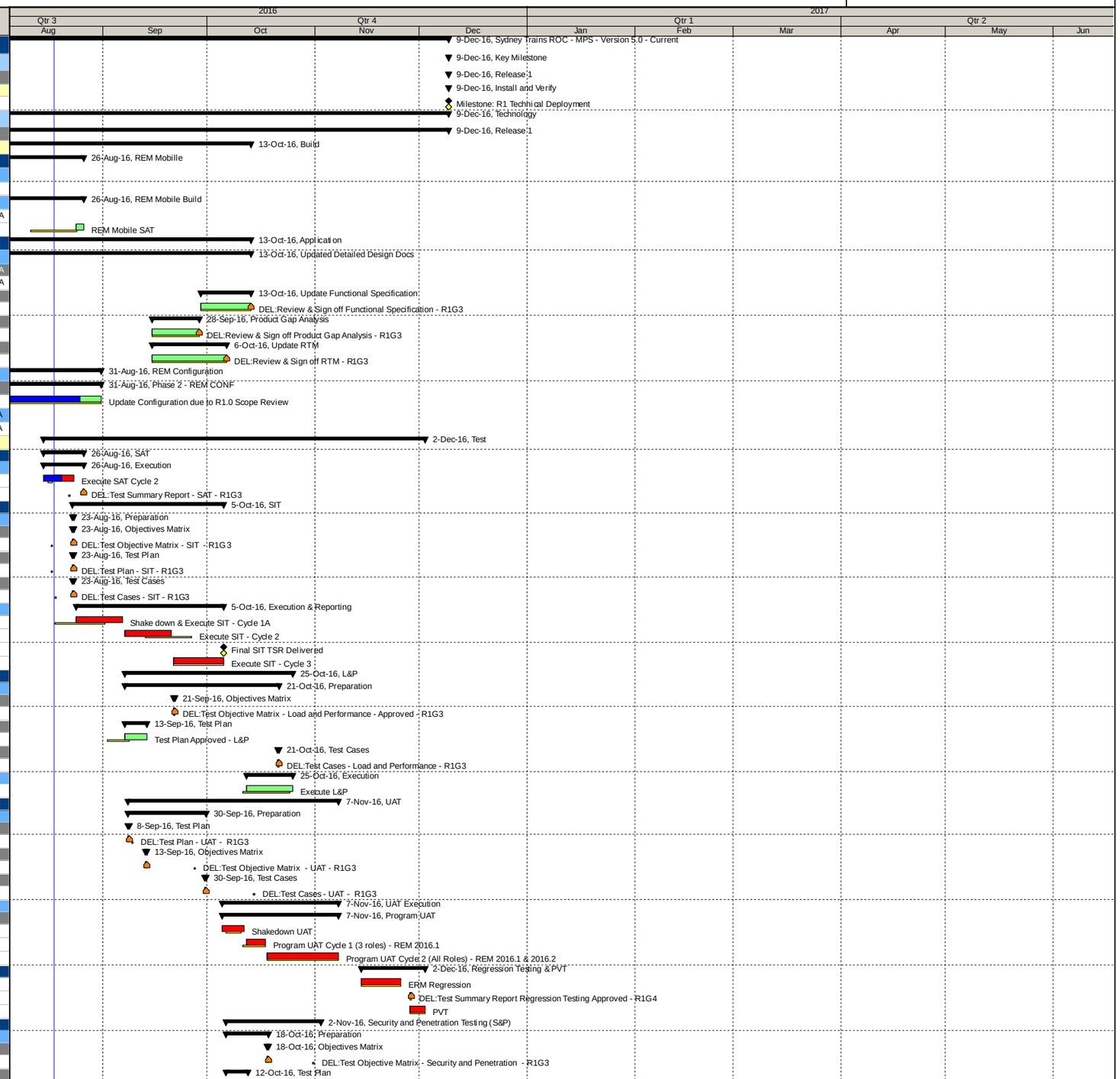
SIT 9C	Working days	Orginal FTEs	Working hours per day	Working hours per day	Additional Weekend hours	People Hours	Test Cases de-scoped
l (6 weeks)	30	3	8	6		540	
v (5 week)	25	3	9	7	0	525	2.8%

Time in leui Hours per FTE	Time in leui days
10	1.25

25	3.125

Sydney Trains Rail Operations Center (ROC)
Master Program Schedule Version 5.0 - *DRAFT - Work In Progress - ROC - All Streams*

#	Activity ID	Activity Name	Start	Finish
1	**Sydney Trains ROC - MPS - Version 5.0 - Current**		8-Feb-16 A	9-Dec-16
2	**Key Milestone**		9-Dec-16	9-Dec-16
3	**Release 1**		9-Dec-16	9-Dec-16
4	**Install and Verify**		9-Dec-16	9-Dec-16
5	TEC-KM-1150	Milestone: R1 Technical Deployment		9-Dec-16*
6	**Technology**		8-Feb-16 A	9-Dec-16
7	**Release 1**		8-Feb-16 A	9-Dec-16
8	**Build**		8-Feb-16 A	13-Oct-16
9	**REM Mobille**		8-Feb-16 A	26-Aug-16
10	**REM Mobile Functional Specification**		13-Apr-16 A	6-May-16 A
11	TEC-TR1-910270	DEL:REM Mobile Functional Specification - R1G3	13-Apr-16 A	6-May-16 A
12	**REM Mobile Build**		8-Feb-16 A	26-Aug-16
13	TEC-TR1-910330	REM Mobile Development, Build & System Testing	8-Feb-16 A	27-May-16 A
14	TEC-TR1-910380	REM Mobile SAT	24-Aug-16*	26-Aug-16
15	**Application**		18-Apr-16 A	13-Oct-16
16	**Updated Detailed Design Docs**		18-Apr-16 A	13-Oct-16
17	**Updated DTBRS**		18-Apr-16 A	10-May-16 A
18	TEC-TR1-80210	DEL: Technical Business Requirements (DTBRS) - R1G3	18-Apr-16 A	10-May-16 A
19	**Update Functional Specification**		29-Sep-16	13-Oct-16
20	TEC-TR1-911680	DEL:Review & Sign off Functional Specification - R1G3	29-Sep-16	13-Oct-16
21	**Product Gap Analysis**		15-Sep-16	28-Sep-16
22	TEC-TR1-913030	DEL:Review & Sign off Product Gap Analysis - R1G3	15-Sep-16	28-Sep-16
23	**Update RTM**		15-Sep-16	6-Oct-16
24	TEC-TR1-911840	DEL:Review & Sign off RTM - R1G3	15-Sep-16	6-Oct-16
25	**REM Configuration**		1-Jul-16 A	31-Aug-16
26	**Phase 2 - REM CONF**		1-Jul-16 A	31-Aug-16
27	TEC-TR1-40310	Update Configuration due to R1.0 Scope Review	1-Jul-16 A	31-Aug-16
28	**REM Core Product Development**		28-Apr-16 A	28-Apr-16 A
29	TEC-TR1-90720	REM Core Product Development Complete		28-Apr-16 A
30	**Test**		15-Aug-16 A	2-Dec-16
31	**SAT**		15-Aug-16 A	26-Aug-16
32	**Execution**		15-Aug-16 A	26-Aug-16
33	TEC-TR1-12010	Execute SAT Cycle 2	15-Aug-16 A	23-Aug-16
34	TEC-TR1-12000	DEL:Test Summary Report - SAT - R1G3	26-Aug-16	26-Aug-16
35	**SIT**		23-Aug-16	5-Oct-16
36	**Preparation**		23-Aug-16	23-Aug-16
37	**Objectives Matrix**		23-Aug-16	23-Aug-16
38	TEC-TR1-20350	DEL:Test Objective Matrix - SIT - R1G3	23-Aug-16	23-Aug-16
39	**Test Plan**		23-Aug-16	23-Aug-16
40	TEC-TR1-20390	DEL:Test Plan - SIT - R1G3	23-Aug-16	23-Aug-16
41	**Test Cases**		23-Aug-16	23-Aug-16
42	TEC-TR1-20430	DEL:Test Cases - SIT - R1G3	23-Aug-16	23-Aug-16
43	**Execution & Reporting**		24-Aug-16	5-Oct-16
44	TEC-TR1-12100	Shake down & Execute SIT - Cycle 1A	24-Aug-16	6-Sep-16
45	TEC-TR1-911850	Execute SIT - Cycle 2	7-Sep-16	20-Sep-16
46	TEC-TR1-911880	Final SIT TSR Delivered		5-Oct-16
47	TEC-TR1-911890	Execute SIT - Cycle 3	21-Sep-16	5-Oct-16
48	**L&P**		7-Sep-16	25-Oct-16
49	**Preparation**		7-Sep-16	21-Oct-16
50	**Objectives Matrix**		21-Sep-16	21-Sep-16
51	TEC-TR1-111170	DEL:Test Objective Matrix - Load and Performance - Approved - R1G3	21-Sep-16	21-Sep-16
52	**Test Plan**		7-Sep-16	13-Sep-16
53	TEC-TR1-111200	Test Plan Approved - L&P	7-Sep-16	13-Sep-16
54	**Test Cases**		21-Oct-16	21-Oct-16
55	TEC-TR1-111250	DEL:Test Cases - Load and Performance - R1G3	21-Oct-16	21-Oct-16
56	**Execution**		12-Oct-16	25-Oct-16
57	TEC-TR1-12020	Execute L&P	12-Oct-16	25-Oct-16
58	**UAT**		8-Sep-16	7-Nov-16
59	**Preparation**		8-Sep-16	30-Sep-16
60	**Test Plan**		8-Sep-16	8-Sep-16
61	TEC-TR1-111420	DEL:Test Plan - UAT - R1G3	8-Sep-16	8-Sep-16
62	**Objectives Matrix**		13-Sep-16	13-Sep-16
63	TEC-TR1-111370	DEL:Test Objective Matrix - UAT - R1G3	13-Sep-16	13-Sep-16
64	**Test Cases**		30-Sep-16	30-Sep-16
65	TEC-TR1-111460	DEL:Test Cases - UAT - R1G3	30-Sep-16	30-Sep-16
66	**UAT Execution**		5-Oct-16	7-Nov-16
67	**Program UAT**		5-Oct-16	7-Nov-16
68	TEC-TR1-12140	Shakedown UAT	5-Oct-16	11-Oct-16
69	TEC-TR1-12210	Program UAT Cycle 1 (3 roles) - REM 2016.1	12-Oct-16	17-Oct-16
70	TEC-TR1-12220	Program UAT Cycle 2 (All Roles) - REM 2016.1 & 2016.2	18-Oct-16	7-Nov-16
71	**Regression Testing & PVT**		14-Nov-16	2-Dec-16
72	TEC-TR1-913000	ERM Regression	14-Nov-16	25-Nov-16
73	TEC-TR1-913090	DEL:Test Summary Report Regression Testing Approved - R1G4	28-Nov-16	28-Nov-16
74	TEC-TR1-913040	PVT	28-Nov-16	2-Dec-16
75	**Security and Penetration Testing (S&P)**		6-Oct-16	2-Nov-16
76	**Preparation**		6-Oct-16	18-Oct-16
77	**Objectives Matrix**		18-Oct-16	18-Oct-16
78	TEC-TR1-911230	DEL:Test Objective Matrix - Security and Penetration - R1G3	18-Oct-16	18-Oct-16
79	**Test Plan**		6-Oct-16	12-Oct-16



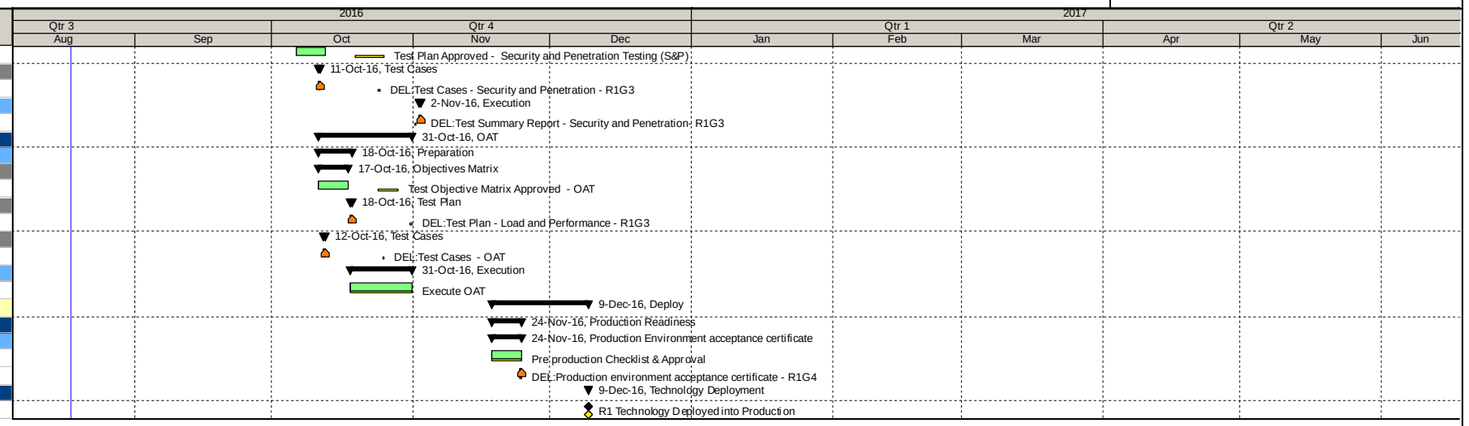
Sydney Trains ROC - MPS - Version 5.0 - Current - 19-Aug-16
Data Date: 18-Aug-16

Baseline
Remaining Work
Critical Remaining Work
Physical % Complete
Baseline Milestone
Milestone
Deliverable
Summary

Date	Revision	Checked	Approved
19-Aug-16	Version 5.0 - Draft for Discussion	EA	

Sydney Trains Rail Operations Center (ROC)
Master Program Schedule Version 5.0 - *DRAFT - Work In Progress - ROC - All Streams*

#	Activity ID	Activity Name	Start	Finish
80	TEC-TR1-911260	Test Plan Approved - Security and Penetration Testing (S&P)	6-Oct-16	12-Oct-16
81	**Test Cases**		11-Oct-16	11-Oct-16
82	TEC-TR1-911310	DEL:Test Cases - Security and Penetration - R1G3	11-Oct-16	11-Oct-16
83	**Execution**		2-Nov-16	2-Nov-16
84	TEC-TR1-911400	DEL:Test Summary Report - Security and Penetration- R1G3	2-Nov-16	2-Nov-16
85	**OAT**		11-Oct-16	31-Oct-16
86	**Preparation**		11-Oct-16	18-Oct-16
87	**Objectives Matrix**		11-Oct-16	17-Oct-16
88	TEC-TR1-911010	Test Objective Matrix Approved - OAT	11-Oct-16	17-Oct-16
89	**Test Plan**		18-Oct-16	18-Oct-16
90	TEC-TR1-911060	DEL:Test Plan - Load and Performance - R1G3	18-Oct-16	18-Oct-16
91	**Test Cases**		12-Oct-16	12-Oct-16
92	TEC-TR1-911100	DEL:Test Cases - OAT	12-Oct-16	12-Oct-16
93	**Execution**		18-Oct-16	31-Oct-16
94	TEC-TR1-911170	Execute OAT	18-Oct-16	31-Oct-16
95	**Deploy**		18-Nov-16	9-Dec-16
96	**Production Readiness**		18-Nov-16	24-Nov-16
97	**Production Environment acceptance certificate**		18-Nov-16	24-Nov-16
98	TEC-TR1-112400	Pre production Checklist & Approval	18-Nov-16	24-Nov-16
99	TEC-TR1-112409	DEL:Production environment acceptance certificate - R1G4	24-Nov-16	24-Nov-16
100	**Technology Deployment**		9-Dec-16	9-Dec-16
101	TEC-TR1-12230	R1 Technology Deployed into Production	9-Dec-16	



Baseline | Physical % Complete | Deliverable
Remaining Work | Baseline Milestone | Summary
Critical Remaining Work | Milestone

Date	Revision	Checked	Approved
19-Aug-16	Version 5.0 - Draft for Discussion	EA	

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

The overall risk management process to be applied can be summarised in the figure below.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

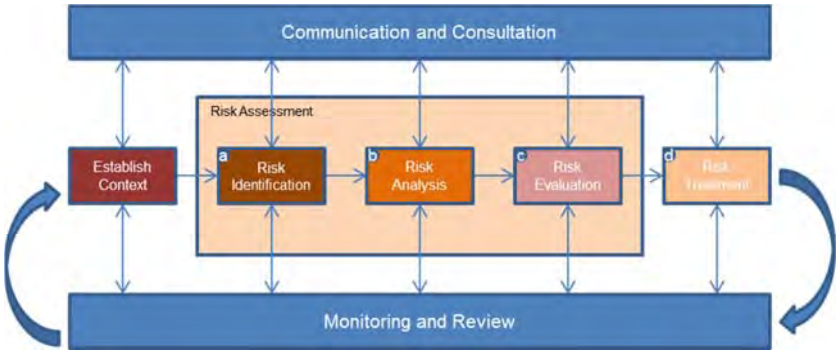


Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

Appendix E - Acceptance Form.doc

AJILON MILESTONE ACCEPTANCE

CLIENT NAME :	**Sydney Trains**
CONTRACT :	
PROJECT :	

Milestone Details

The following Milestones have been met under the above project:

Milestone/ Deliverable	Evidence	Date Provided/Met

The above Milestones/ Deliverables have been provided/ met :

Signature _____

Project Director _____

Date _____

On Behalf Of Ajilon Consulting Pty Ltd

Signature _____

Program Manager _____

Date _____

On Behalf Of Sydney Trains

[Ajilon Commercial use]		
Description	**Amount**	**Comments/Reference**
Client Purchase Order Value	$	
Value of Previous Claims	$	
Value of this Claim	$	Payable to Ajilon
Total Value this Claim	**$**	Payable by Sydney Trains
Balance Outstanding	$	

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The “doer” creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one “A” can be assigned to an action. Also known as the "Owner” of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. “In the Loop”
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. “Keep in the Picture”

The following is the RACI previously used for the Detailed Design Agreement, less the Agreement and PIPP deliverables. The Parties acknowledge and agree to retain the RACI for Detailed Design work required for Release 3.

#	Release 1 Detailed Design	Contractor	Systems Integrator	Customer
1	High Level Solution Design	R	A,R	C
2	Release 1 Architecture Specification	R	A,R	C
3	Release 1 Functional Specification	R	AR	C
4	Release 1 Non-Functional Design	R	AR	C
5	Release 1 Integration Specification	R	A,R	C
6	Project Communication Plan for Release 1	C	A,R	C
7	Release 1 Data Management Plan	R	A,R	C
8	Release 1 Data Technical Analysis Outputs	R	A,R	R
9	Release 1 Technology Implementation Strategy	R	A,R	C
10	Release 1 Technology Implementation Plan (Template)	R	A,R	C
11	Technology Test Strategy	R	A,R	C
12	Updated Project Management Plan	R	A,R	C
13	RACI	C	A,R	C
14	Updated Release 1 Product Gap Analysis	R	A	I
15	Release 1 System Test Plan	R	A,R	C
16	Requirements Traceability Matrix updated for Release 1	R	A,R	C

#	Release 1 Detailed Design	Contractor	Systems Integrator	Customer
17	Technology Environment Management Strategy	R	A,R	C
18	Operating Model	R	A,R	R
19	Draft recommended ROC organisational structure	R	A,R	R
20	Change Impact Analysis (Release 1)	R	A,R	C
21	Release 1 Training Needs Analysis	R	A,R	C

	Release 1 Updated Detailed Design	Contractor	Systems Integrator	Customer
1	High Level Solution Design	R	A,R	C
2	Release 1 Architecture Specification	R	A,R	C
4	Release 1 Non-Functional Design	R	AR	C
5	Release 1 Integration Specification	R	A,R	C
11	Technology Test Strategy	R	A,R	C
12	Project Management Plan	R	A,R	C
13	RACI	C	A,R	C
15	Technology Environment Management Strategy	C	A,R	C
16	Release 1 Data Technical Analysis Outputs	C	A,R	R
17	Release 1 Data Management Plan	R	A,R	C
18	Technology Communications Plan	C	A,R	C
20	Release 1 System Test Plan	R	A,R	C

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
1	Interface Documentation for SIRI (REM 2016.1)	A,R	C	C
2	Shadow Data Base Documentation	A,R	C	C
3	Interface Documentation for Notification Functionality (REM 2016.1)	A,R	C	C
4	Documentation of the REM 2016.1 Data Model	A,R	I	I
5	User Manual for Emergency Management Client (EMC) (REM 2016.1)	A,R	I	I
6	User Manual for Data Management Client (DMC) (REM 2016.1)	A,R	I	I
7	User Manual for Web Portal (REM 2016.1)	A,R	I	I
8	User Manual for REM Mobile 2016.R1	A,R	I	I
9	IMS (REM 2016.R1) Licensed Software	A,R	C	C
10	Licensed Software (REM Mobile 2016.R1)	A,R	C	C

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
11	System Test Summary Report (REM 2016.R1)	A,R	C	I
	REM Mobile Non-Production Demployment			
14	REM Mobile Software Update (QR Code deployment)	A,R	I	I
15	REM Mobile Configuration Process Documentation	A, R	C	C
16	REM Mobile Deployment Process Documentation	A,R	C	C
17	REM Mobile Hand-over to support Documentation (handover of non-production processes & procedures)	A,R	C	C
18	Update of REM Mobile Functional Specification (2016.R1)	A, R	R	I
19	Update of REM Mobile Test Objective Matrix (2016.R1)	A, R	R	I
20	Update of REM Mobile User Manual (2016.R1)	A, R	R	I
21	Update of Requirements Traceability Matrix (2016.R1)	A, R	R	I
	REM & REM Mobile 2016.R2			
22	REM System/Software Delivery (REM Release 2016.R2)	A,R	C	C
23	REM System/Software Delivery (REM Mobile 2016.R2)	A,R	C	C
24	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	R	A,R	C
25	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	R	A,R	C
26	Update of Interface Documentation for SIRI (REM 2016.R2)	A,R	C	C
27	Interface Documentation for Notification Functionality (REM 2016.R2)	A,R	C	C
28	Update Documentation of the REM 2016.2 Data Model	A,R	C	C
29	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	A,R	C	C
30	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	A,R	C	C
31	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	A,R	C	C
32	Update Requirements Traceability Matrix for REM 2016.R2	R	A,R	C
33	Test Summary Report for System Test (REM Release 2016.R2)	AR	I	I

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
34	Test Summary Report for System Test (REM Mobile 2016.R2)	AR	I	I
35	**Testing Deliverables**			
	SAT			
3	SAT Test Objective Matrix (2016.R1)	A,R	C	C
37	SAT Test Cases (2016.R1)	A,R	C	C
38	SAT Test Summary Report (2016.R1)	A,R	C	C
39	SAT Test Objective Matrix (2016.R2)	A,R	C	C
40	SAT Test Cases (2016.R2)	A,R	C	C
41	SAT Test Summary Report (2016.R2)	A,R	C	C
	System Testing for TIBCO and Other Interfaces			
42	Detailed Test Plan	C	A,R	C
43	Test Objective Matrix	C	A,R	C
44	Test Cases	C	A,R	C
45	Test Summary Report	C	A,R	C
	SIT			
46	Detailed Test Plan	R	A,R	C
47	Test Objective Matrix	C	A,R	C
48	Test Cases	C	A,R	C
49	Test Summary Report	C	A,R	C
	Load and Performance Testing			
50	Detailed Test Plan	C	A,R	C
51	Test Objective Matrix	C	A,R	C
52	Test Cases	C	A,R	C
53	Test Summary Report	C	A,R	C
	User Acceptance Testing			
54	Detailed Test Plan	C	A,R	C
55	Test Objective Matrix	C	A,R	C
56	Test Cases	C	A,R	C
57	Test Summary Report	C	A,R	C
	Operational Acceptance Testing			
58	Detailed Test Plan	C	C	A,R
59	Test Objective Matrix	C	C	A,R
60	Test Cases	C	C	A,R
61	Test Summary Report	C	C	A,R
	Security and Penetration Testing			
62	Detailed Test Plan	C	C	A,R

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
63	Test Objective Matrix	C	C	A,R
64	Test Cases	C	C	A,R
65	Test Summary Report	C	C	A,R
	Cross Stream Testing			
66	Detailed Test Plan	C	C	A,R
67	Test Objective Matrix	C	C	A,R
68	Test Cases	C	C	A,R
69	Test Summary Report	C	C	A,R
	Deployment Deliverables			
70	Hand Over Plan	R	A,R	C
71	Post Implementation Verification Report	C	C	A,R
	Training			
72	Train the Trainer Training Material	A,R	I	I
73	System Administration Train Material	A,R	I	I
74	Application Administration Training Material	A,R	I	I

Appendix G – Acceptance Criteria

Approval Criteria for Project Preparation Phase

The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

Approval Criteria for Detailed Design (Release 1) Phase

Standard List of Approval Criteria

The Approval Criteria for the following Deliverables of Detailed Design (Release 1) Phase are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase;

b) where the Deliverable is a document, that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (section 5.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design Phase, following the completion of the initial Customer/ Contractor workshops.

The Deliverable shall be deemed fit for purpose when all criteria expressed above have been met.

Appendix H – Testing Baseline

ROC-BCT-SG-0001
v2 0_ROC Program T

ROC **Program Test Management Framework**

Transport Sydney Trains

Rail Operations Centre
Program Test Management Framework

Program Management Document Control	
Project or Program	Rail Operations Centre (ROC)

ROC Program Test Management Framework

Document Ownership Information

TRIM#

Capital Register ID	3141.02

Sponsor	Howard Collins, Chief Executive	Sydney Trains

Sponsor's Delegate	TBC	Future Network Delivery Directorate
Program Director	Matt McInnes, ROC Program Director	Future Network Delivery Directorate

Document Name and Version Control

(Circulated versions only)

Document Name & Location		*ROC-BCT-SG-0001 v2.0 ROC Program Test Management Framework (Approved)*	
Version	**Date**	**Author**	**Reason for Issue / Changes Included**
v0.1	12 Dec 2014	Simon Baker	Initial draft for internal program review
V0.2	13 Jan 2015	Simon Baker	Updated with feedback from internal Program review
V1.0	15 Jan 2015	Simon Baker	Updated with feedback from Stefano Bianchini for distribution to technology vendors participating in HLSD
V1.1	27 Nov 2015	Simon Baker	Updated for internal Program review
V1.2	6 Mar 2016	Simon Baker	Updated with feedback from internal Program review and reissued for internal Program endorsement
V1.3	23 Mar 2016	Simon Baker	Version internally endorsed by the Program. Shared with external Program stakeholders for review
V2.0	15 April 2016	Simon Baker	Updated with feedback from external Program stakeholder review and reissued for external Program stakeholder endorsement

ROC Program Test Management Framework

Document Approvals, Endorsements and Distribution

Stakeholders are requested to approve/endorse this document as an agreed ROC Program Test Management Framework baseline as at ROC Release 1, Gate 2. That is, the document outlines a Test Management Framework which is appropriate for the ROC Program and upon which subsequent, more detailed test planning documentation should be based. In the event thinking in relation to the Test Management Framework changes in a material way throughout the life of the ROC Program, this document will be iterated and redistributed for review, approval/endorsement to provide an updated baseline.

Note – Resources named below are requested to share this document within their domain(s) as required. *This document may need to be socialised with new vendors engaged on the ROC Program after it has been baselined for ROC Release 1, Gate 2.*

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Glossary of Terms and Abbreviations

Term/Abbreviation	Description
AEO	Authorised Engineering Organisations
ASA	Asset Standards Authority
BAFO	Best and Final Offer
BAU	Business As Usual
BCP	Business Continuity Plan
CAB	Change Approval Board
CIMS	Customer Information Management System
CMP	Configuration Management Plan
COTS	Configurable Off The Shelf
DRICA-SBA	Register of Dependencies, Risks, Issues, Changes, Actions, Scope, Benefits & Assumptions
DTP	Detailed Test Plan
DTTS	'Day of Operations' Train Timetabling System
E2E	End To End
ERM	Enterprise Release Management
HLSD	High Level Solution Design
HP ALM	HP Application Lifecycle Management
IAP	Infrastructure Assurance Plan
REM	Incident Management System
L&P	Load & Performance
NFR	Non-Functional Requirement
ONRSR	Office of the National Rail Safety Regulator
OVDS	Operational Visual Display System
PCR	Program Change Request
PCE	Phase Containment Effectiveness
PEFM	Project Execution Framework Methodology. PEFm (TfNSW) templates are used in Sydney Trains IT as the Technology layer (System Development Lifecycle) for IT projects or projects with an IT component
PIV	Post Implementation Verification
PMLC	Project Management Life Cycle. PMLC (Sydney Trains) templates must be used when seeking Capital funding approval through the establishment of business cases to analyse, justify, track and report on costs and benefits for the investment of Sydney Train projects.
Program	ROC Program
PT	Performance Testing
QAS	Quality Assurance Services
QTP	Quick Test Professional
RfP	Request for Proposal
RMP	Requirements Management Plan
RMC	Rail Management Centre
ROC	Rail Operations Centre
ROC Solution	The baseline ROC Solution Design defines the ROC Solution Scope of delivery for technology, people and process, and infrastructure to achieve the desired program outcomes and to realise the end benefits in accordance with the business and stakeholder expectations.

Term/Abbreviation	Description
RQA	Requirements Quality Assurance
SAPF	Systems Assurance & Planning Framework
SIT	System Integration Testing
SME	Subject Matter Expert
SoW	Statement of Work
ST	System Testing
T&C	Transformation & Change
Test Cycle	Test execution for a phase is divided into Test Cycles. Each Cycle of execution will have an agreed number of test cases which will be executed during the cycle within the specified duration of the phase.
TEMS	Technology Environment Management Strategy
TfNSW	Transport for NSW
TID	Technical Infrastructure Design
TOM	Test Objectives Matrix
TSR	Test Summary Report
UAT	User Acceptance Testing
UI	User Interface
UT	Unit Testing

ROC Program Test Management Framework

Table of Contents

1 Executive Summary

This document positions the ROC Program Test Management Framework within the high level context of the ROC Program:

- Solution
- Team structure
- Release Strategy
- Systems Assurance and Planning Framework (SAPF)

The ROC Program solution will include the following components:

- New technology systems, integrated with existing technologies
- New ways of working including new Business processes and organisational structure
- New infrastructure including property and operational technology systems

All these components must ultimately combine to form a ROC Solution which can be demonstrated to be safe, complete, correct and fit for purpose. While the Program has been structured into delivery streams, with this outcome in mind it follows stream deliverables should be produced in the context of the final solution from requirements, through to design, build, testing and acceptance.

The SAPF is a series of plans which outline how assurance will be applied across the ROC Program. Verification and Validation (V&V) is one of many methods by which the ROC Program will assure deliverables. Testing is a sub-set of V&V and as such is an important element of the ROC Program's overall assurance strategy.

This document outlines how ROC Program testing will be delivered and fit within the wider Program approach to V&V and the SAPF.

The ROC Program Test Management Framework reflects the ROC Program Team structure. Within streams, components of the solution should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components. This pattern will continue until stream deliverables are brought together and the solution tested as a whole.

Progressive assurance and testing will help build both the Business and Program confidence required to implement the solution into Business operations and 'go-live'.

2 Introduction

2.1 ROC Overview

The Rail Operations Centre (ROC) is a Sydney Trains led program seeking to improve management of 'day of operations' activities and improve the delivery of services for Sydney Trains, NSW Trains and their customers via the delivery of:

- Infrastructure: a new ROC building
- People: co-location of 'day of operations' functions into the ROC
- Technology: four new system capabilities
- Processes: new improved ways of working enabled by all of the above

2.2 ROC Vision

The ROC Program supports the strategy of Transport for New South Wales (TfNSW), Sydney Trains, and NSW Trains to transform the customer experience in line with their vision of "putting the customer at the heart of everything we do".

Better coordination, communication, and management will be achieved through the ROC, which will co-locate teams and transform the processes, systems, and communications for 'day of operations' functions. This co-location is expected to include computer based signalling locations, train control, security, customer information, fleet management, asset monitoring and incident response functions.

The transformation will deliver consistent, accurate, timely and up to date information to customers about delays and enable faster incident resolution and service recovery. It will provide the operational management of the Sydney Trains network with a highly coordinated customer focus and will support the realisation of benefits from future initiatives including major infrastructure programs, the Rail Futures Strategy and future business model changes.

2.3 ROC Program Delivery Structure

Given the complexity of the ROC Program a robust governance structure is required. The ROC Program has been set up with an organisational structure which aims to:

- Ensure appropriate oversight of the program's continual performance
- Enable effective and informed decision making from stakeholders outside of the delivery structure.

Program delivery has been organised into five streams, with overarching program management governance:

- Infrastructure - delivery of the physical building and its supporting infrastructure
- Technology - delivery of the four new core systems and integration into existing systems
- Transformation and Change - new ROC processes, people and organisational structures
- Solution Integration - program assurance and delivery of program benefits within acceptable risk tolerance
- Business Continuity & Program Testing - delivery of Business Continuity capability and Cross Stream Testing

The early phases of the technology program have been broken up as follows:

- High Level Design – A period of approximately five weeks commencing in early January 2015 in which two consortiums of vendor(s) worked with the ROC Program to develop parallel High Level Solution Designs (HLSD) and a BAFOs, among other deliverables

- Detailed Design – Following the parallel High Level Design Phase technology vendor(s) were down selected to participate in the Detailed Design Phase

2.4 ROC Technology Systems

The ROC 'day of operations' model will be supported by four new technology systems, integrated with each other and into the existing Sydney trains technology environment:

- 'Day of Operations' Train Timetabling System (DTTS) - Provides computerised support for monitoring services and managing service disruptions.
- Incident Management System (REM) - Provides computerised support for identification of incidents, assignment of priority, allocation of pre-planned workflows, tracking of progress, escalation and reporting.
- Customer Information Management System (CIMS) - Provides a single source of truth for customer information and the co-ordinated distribution of planned service details as well as service disruption information over multiple channels.
- Operational Visual Display System (OVDS) - Provides an integrated monitoring capability. It supports the creation of virtual walls containing the output from multiple source systems.

In addition to meeting the business needs and capabilities of the ROC, the new systems will also support international transport-based integration standards and allow for future expansion into computer based traffic management.

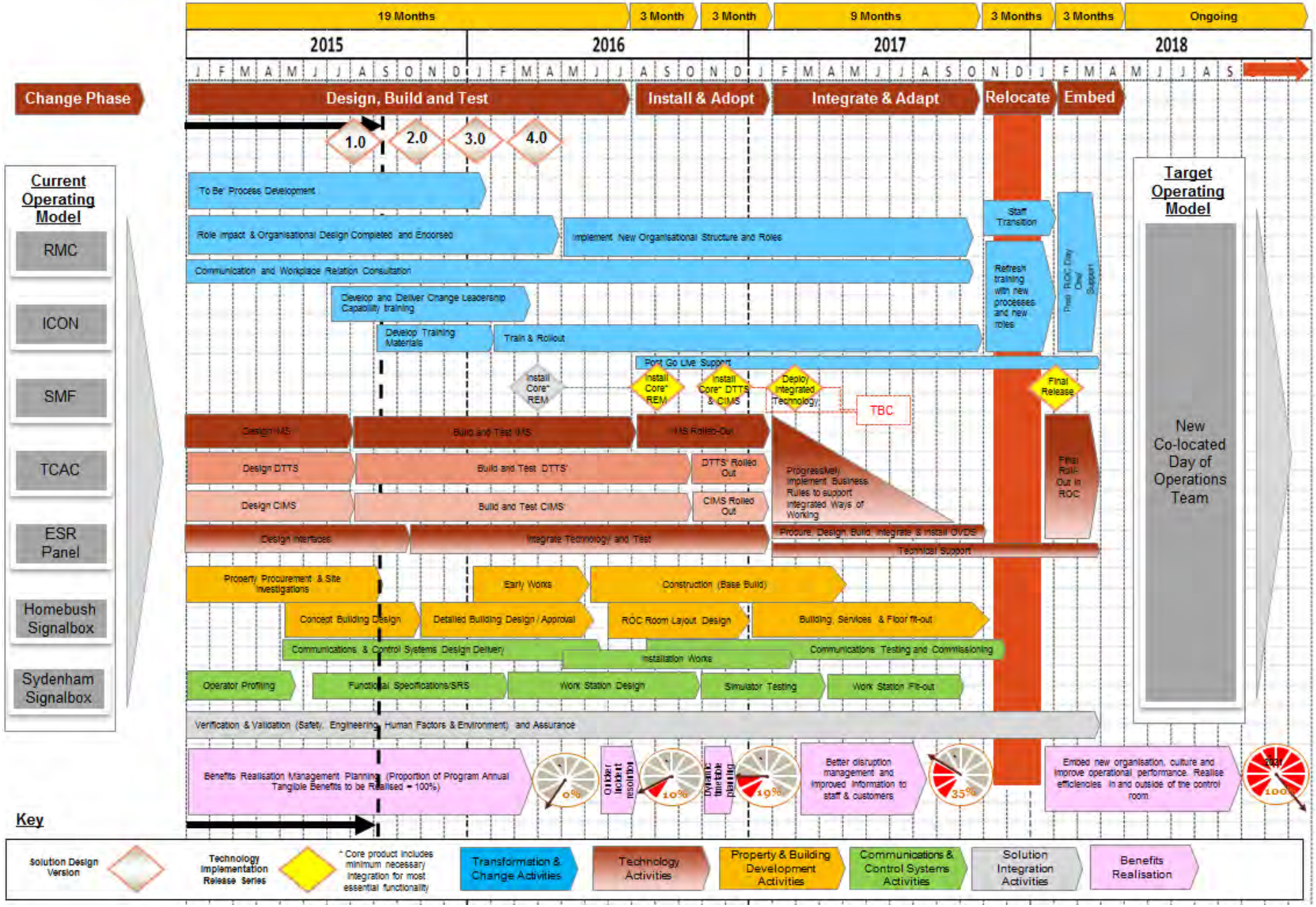
The first three of these four systems capabilities listed above are described as sub projects in the context of the ROC technology procurement process. These three sub projects and a Systems Integrator role formed the scope of the ROC Technology Request for Proposal (RfP).

2.5 ROC Program Principles

The following principles underpin the technology program design and implementation approach:

- The overarching philosophy of the technology program is to "Buy not Build" technology capability to meet the identified business needs
- New technology systems to be introduced will be 'off the shelf' to the extent that is practicable. i.e. configuration of Licensed Software, not changes to source code
- New technology business processes will be implemented as near to 'out of the box' as is practicable i.e. the existing business process will change to align with the processes that are provided with new systems
- The above principles apply provided there is no breach of regulatory requirements or internal policies
- New technologies will be implemented in a phased roll out which optimises the balance of technical risk, business benefit, the level and rate of impact on affected users
- The program will avoid a "big-bang" implementation
- The technology roll out can occur prior to the completion and transition of the business users into the new ROC facility, provided business benefits associated with the new technology can be realised

These Principles are reflected in the sample ROC Implementation Roadmap shown on the following page. The roadmap is expected to evolve over the life of the Program. An update to the roadmap will not necessarily trigger a reissue of the Program Test Management Framework.


19 Months
3 Month
3 Month
9 Months
3 Months
3 Months
Ongoing
2015
2016
2017
2018
Change Phase
Design, Build and Test
Install & Adopt
Integrate & Adapt
Relocate
Embed
1.0
2.0
3.0
4.0
Current Operating Model
RMC
ICON
SMF
TCAC
ESR Panel
Homebush Signalbox
Sydenham Signalbox
'To Be' Process Development
Role Impact & Organisational Design Completed and Endorsed
Implement New Organisational Structure and Roles
Staff Transition
Communication and Workplace Relation Consultation
Refresh training with new processes and new roles
Post ROC Day One Support
Develop and Deliver Change Leadership Capability training
Develop Training Materials
Train & Rollout
Port Go Live Support
Install Core* REM
Install Core* DTTS & CIMS
Deploy Integrated Technology
TBC
Final Release
Design IMS
Build and Test IMS
IMS Rollout
Design DTTS
Build and Test DTTS
DTTS Rolled Out
Design CIMS
Build and Test CIMS
CIMS Rolled Out
Progressively implement Business Rules to support Integrated Ways of Working
Final Roll-Out in ROC
Design Interfaces
Integrate Technology and Test
Procure, Design, Build, Integrate & Install OVDs
Technical Support
Property Procurement & Site Investigations
Early Works
Construction (Base Build)
Concept Building Design
Detailed Building Design / Approval
ROC Room Layout Design
Building, Services & Floor fit-out
Communications & Control Systems Design Delivery
Installation Works
Communications Testing and Commissioning
Operator Profiling
Functional Specifications/SRS
Work Station Design
Simulator Testing
Work Station Fit-out
Verification & Validation (Safety, Engineering, Human Factors & Environment) and Assurance
Benefits Realisation Management Planning (Proportion of Program Annual Tangible Benefits to be Realised = 100%)
0%
Driver ticket reporting
10%
Dynamic timetable planning
19%
Better disruption management and improved information to staff & customers
35%
Embed new organisation, culture and improve operational performance. Realise efficiencies in and outside of the control room
100%
Target Operating Model
New Co-located Day of Operations Team
Key
Solution Design Version
Technology Implementation Release Series
* Core product includes minimum necessary integration for most essential functionality
Transformation & Change Activities
Technology Activities
Property & Building Development Activities
Communications & Control Systems Activities
Solution Integration Activities
Benefits Realisation

2.6 ROC Program Releases

For early Program planning purposes the ROC Roadmap has the Program being delivered via four Releases:

Release	Timing	Description
Release 1	Late 2016	A new incident management system to help staff who work in supporting the moving or controlling of trains to communicate, collaborate and resolve incidents faster, providing a better service to customers. The system will facilitate the resolution of incidents in real time.
Release 2	Mid 2017	A new 'day of operations' timetabling system to support train controllers in planning to recover service from a disruption. A new customer information system to provide a single source of information for service line status and service alerts for all customer and staff channels, including mobile apps, websites, Station Passenger Information screens and Variable Message Screens.
Release 3	Late 2017	Incident management, timetable changes and customer information is fully integrated with existing systems and alerts. Incidents and timetable changes are linked to customer information providing real time information.
Release 4	First Half 2018	Progressively move business functions into new ROC building.

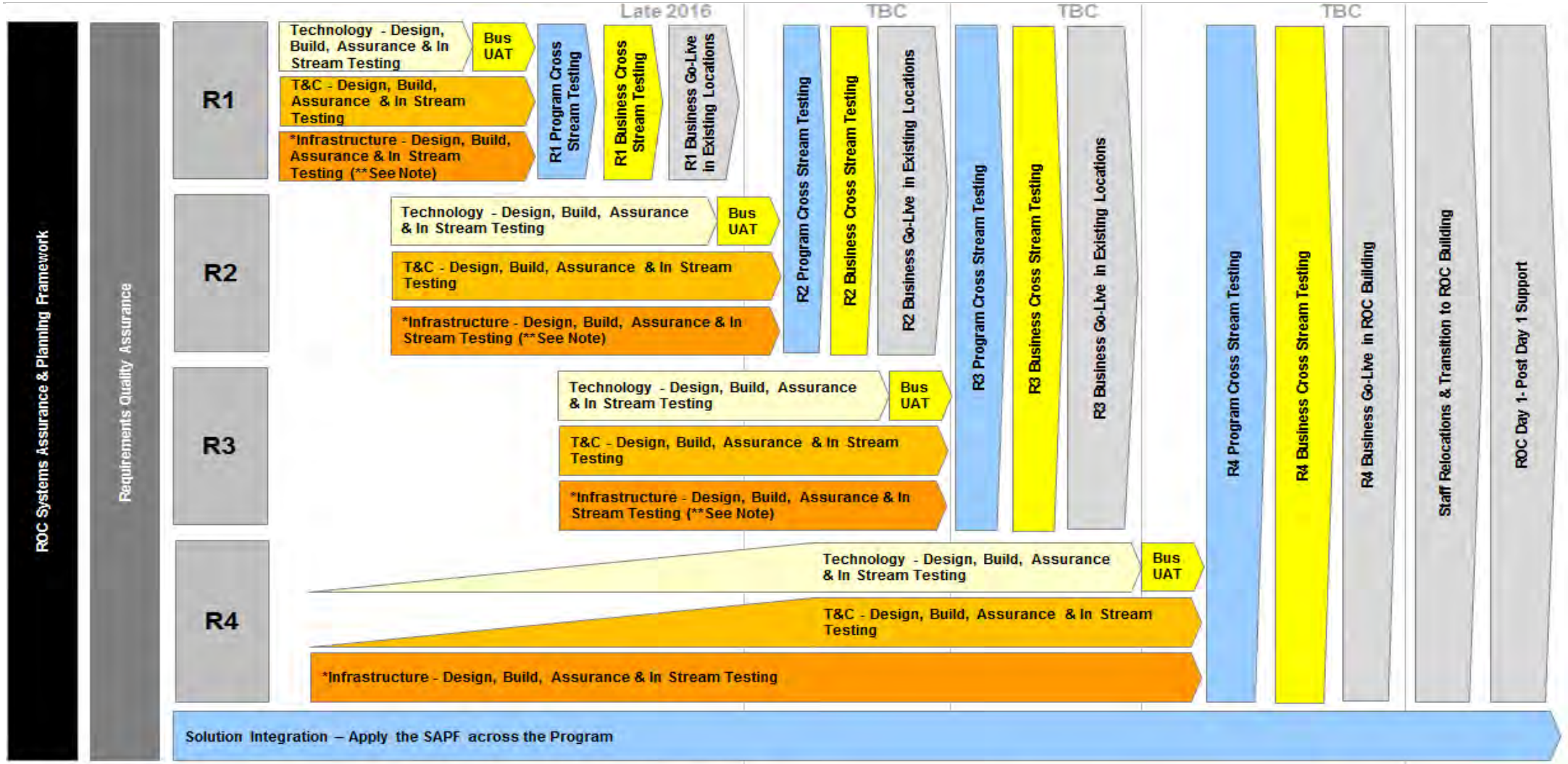
2.7 ROC Program Test Principles

To support the ROC Program principles, wherever possible the following test principles will be applied throughout the Program:

- ROC Testing should align to Program Schedule milestones and support the Program Implementation Strategy
- Solution components should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components
- Where solution components derived from requirements are tested, traceability of tests to requirements and test coverage of requirements should both be demonstrable
- Test phases will build on previous test phases to help assure the final solution delivered is safe, complete, correct and fit for purpose
- A risk based approach will be applied to testing. Test cases should be prioritised into essential, high, medium and low based on risk and be executed in priority order so far as it is feasible to do so
- For applicable test phases, Program testing should occur prior to business testing. Benefits of this approach include:
    - Using professional testers to identify defects prior to business testing will reduce business resource 'testing fatigue'
    - Build Program confidence prior to business exposure
    - Duration and iterations of business testing should be reduced
    - Business resources initial experience is positive
    - Positive word of mouth from Business testers back to their teams
- Any elements of the ROC solution(s) which are to be implemented into current operating locations should be 'Cross-Stream' tested to demonstrate the ROC solution including technology, processes, roles and infrastructure is safe, complete, correct and fit for purpose prior to implementation into business operations
- The ROC solution including technology, processes, roles and infrastructure should be 'Cross-Stream' tested from the new ROC building to demonstrate the solution is safe, complete, correct and fit for purpose prior to day one of operations
- Testing for each Release will conclude at the completion of Cross-Stream testing
- Any Business readiness activities conducted after Cross-Stream testing are not test phases. The intent of these activities will be to confirm business readiness rather than identify and resolve defects
- Program testing should include an approach to monitor and log variances in technology network performance between different sites (RMC, ICON, SMF, ROC Technology Test Lab, Belmore, ROC Building and Signal Boxes) which may adversely impact operational performance
- Test delivery should be planned so as to not compromise the organisation's ability to manage the 'day of operations'

These Principles should be applied to all major and minor releases delivered by the ROC Program as appropriate, are reflected in the ROC Program Test Management Framework Overview Diagram shown below and are referenced throughout this document.

ROC Program Test Management Framework



Stream deliverables to be designed, built, assured and/or tested include but may not be limited to:

Technology
- IMS
- DTTS
- CIMS
- OVDS
- Existing Application Changes
- Integration
- DR

Transformation & Change
- Current Processes
- Future Processes
- Interim/DR Processes
- IR/OD Strategy
- Role Definitions
- Workload Baselining & Assessment
- Procedures
- Work Instructions
- SME Training Dev & Delivery
- End User Technical Training Dev & Delivery
- End User Behavioural Training Dev & Delivery

Infrastructure
- Property
- Control Room Floor
- Support Spaces
- Facilities
- Control Systems
- Services
- Utilities
- DR

* In Stream Infrastructure testing will comply with Australian Standards, Sydney Trains &/or TfNSW Engineering specifications & processes in order to achieve required certification and /or regulatory compliance.
**Note – It remains to be seen whether the Infrastructure stream will deliver any solution components for R1, R2 or R3.

Business Continuity & Program Testing
- Program Test Management Framework
- Program BCP Strategy

Solution Integration
- Program Roadmap
- Program Safety Change Plan
- Program Requirements Integration Plan
- Program Integrated Configuration Plan
- Program Quality Assurance Plan

Note – Dates are based on draft v3 of the Program Roadmap, which may be subject to change

2.8 Stakeholder Resource Involvement

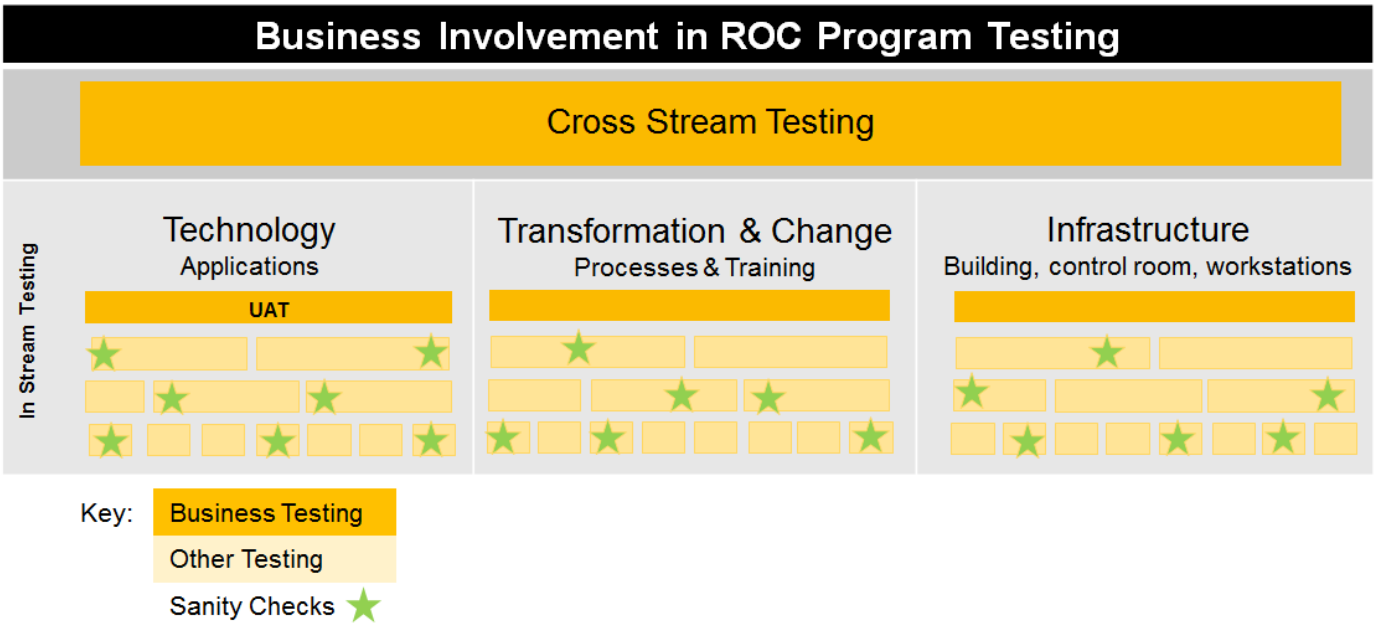
The testing of ROC Program solution components is expected to occur in layers in line with the ROC Program test principle restated below:

- Solution components should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components

From a testing perspective it is anticipated stakeholders will be involved in a number of ways including:

- Review and approval of Test Planning documentation and artefacts
- Informal engagement and involvement in sanity checking the proposed solution throughout design, build and testing
- Formal participation in User Acceptance Testing
- Formal participation in Cross Stream Testing

This participation is illustrated in the diagram below:



3 Background

3.1 ROC Program Systems Engineering Approach

The scope and complexity of the ROC Program creates a broad range of conditions and contexts each ROC stream will operate within. The Program has adopted a systems engineering approach to address this challenge, with each delivery stream applying lower level methodologies as appropriate:

- The Infrastructure stream has adopted a systems engineering framework.
- The Technology stream utilises a systems architecture based practice (PEFM), however this methodology is domain specific and additional linking concepts have had to be established to enable traceability between Technology systems architecture and other streams.
- The Transformation and Change and Program Management Office requirement sets are not typically expressed in architectural terms. To manage this disconnect, new concepts and interfaces have been established to represent the artefacts produced in these streams within an architectural framework that is compatible with their respective methodologies.

The overarching systems engineering approach will assure the validity and quality of the total ROC Solution and is currently reflected in:

- The ROC Component Model
- The ROC Service Delivery Design Blueprint
- The ROC Systems Assurance and Planning Framework

3.2 The ROC Component Model

The ROC solution can be thought of as an integrated set of components being developed and delivered by streams of the ROC Program. The solution, along with interfaces and dependencies between components are described within the ROC Solution Design.

As streams develop components of the solution they will maintain consistency with the broader ROC Solution by ensuring components accurately cross reference any dependent components from within their own stream or another stream.

The ROC Component Model is represented by Figure 1 on the following page and described in more detail within the ROC Service Delivery Design Blueprint.

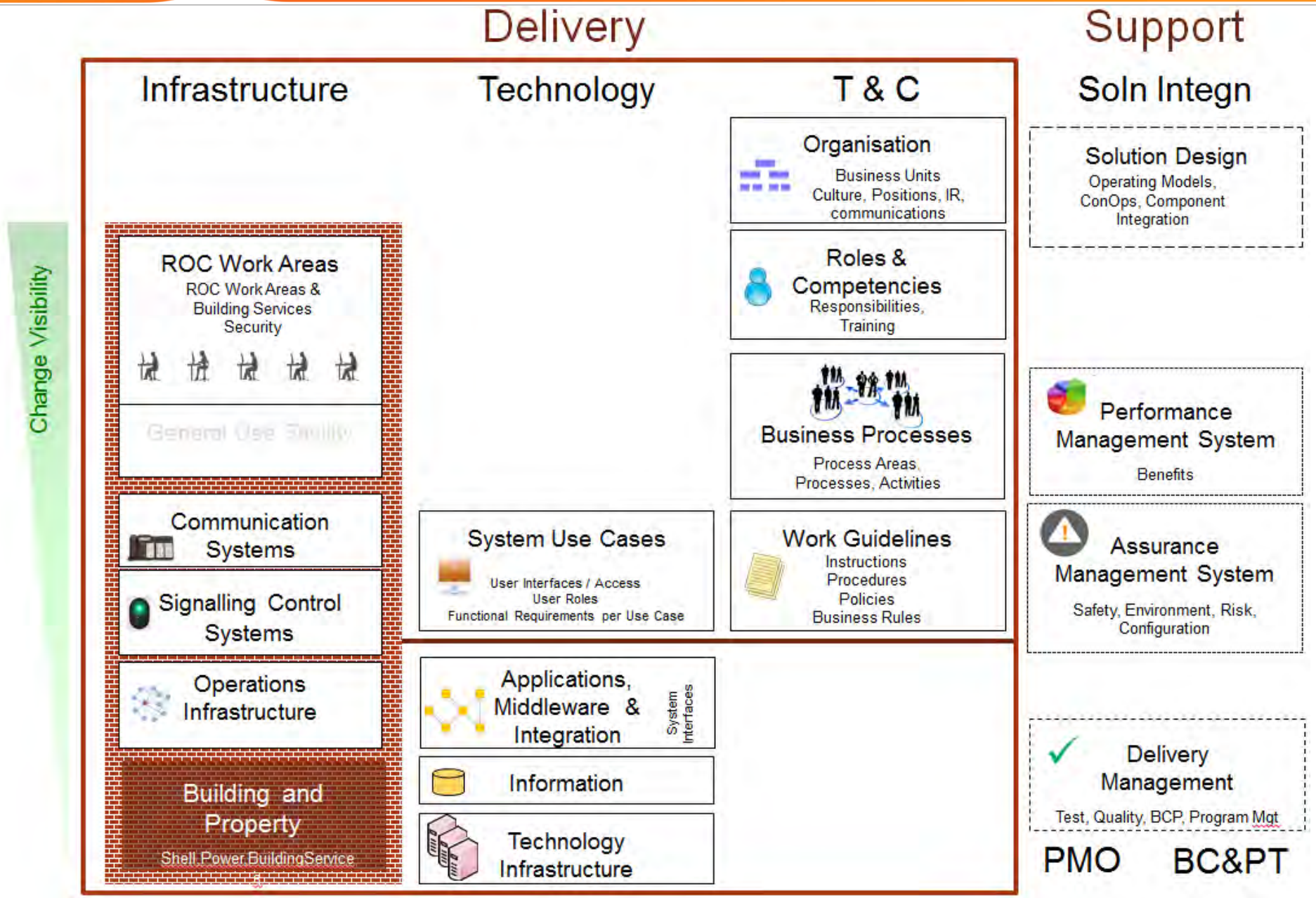

Delivery
Support
Infrastructure
Technology
T & C
Soln Integn
Change Visibility
ROC Work Areas
ROC Work Areas & Building Services Security
General Use Facility
Communication Systems
Signalling Control Systems
Operations Infrastructure
Building and Property
Shell,Power,BuildingService
Organisation
Business Units
Culture, Positions, IR, communications
Roles & Competencies
Responsibilities, Training
Business Processes
Process Areas, Processes, Activities
System Use Cases
User Interfaces / Access
User Roles
Functional Requirements per Use Case
Work Guidelines
Instructions
Procedures
Policies
Business Rules
Applications, Middleware & Integration
System Interfaces
Information
Technology Infrastructure
Solution Design
Operating Models, ConOps, Component Integration
Performance Management System
Benefits
Assurance Management System
Safety, Environment, Risk, Configuration
Delivery Management
Test, Quality, BCP, Program Mgt
PMO
BC&PT

Figure 1

3.3 The ROC Service Delivery Design Blueprint

The ROC Service Delivery Design Blueprint will define a detailed logical design of the targeted solution and end state.

It establishes a holistic architecture which includes references to the types of requirements and deliverables/components of each program stream, as well as the relationships and interfaces between them.

The blueprint can be used to logically test the end to end traceability and completeness of the ROC Solution. It provides assurance components both satisfy stream requirements and also support the integrity of the ROC Program Solution as a whole. The tool allows the ROC Program to monitor key dependencies and align program activities. The blueprint includes:

- Organisational structure - roles, positions, responsibilities, accountabilities, competencies and training
- Decision support requirements - system use cases, end user acceptance testing, overall fitness for purpose
- Infrastructure - control systems and facilities design
- Stakeholder communication and governance
- Compliance and safety, legislation, policy, procedures and work instructions
- Benefits realisation

Another key benefit of this holistic architecture is that it can enable logical testing of a range of different future state scenarios (e.g. performers playing new roles, using new business processes and systems, operating from new facilities).

The service delivery design blueprint may evolve throughout the Program lifecycle. The current version is represented by Figure 2 on the following page.

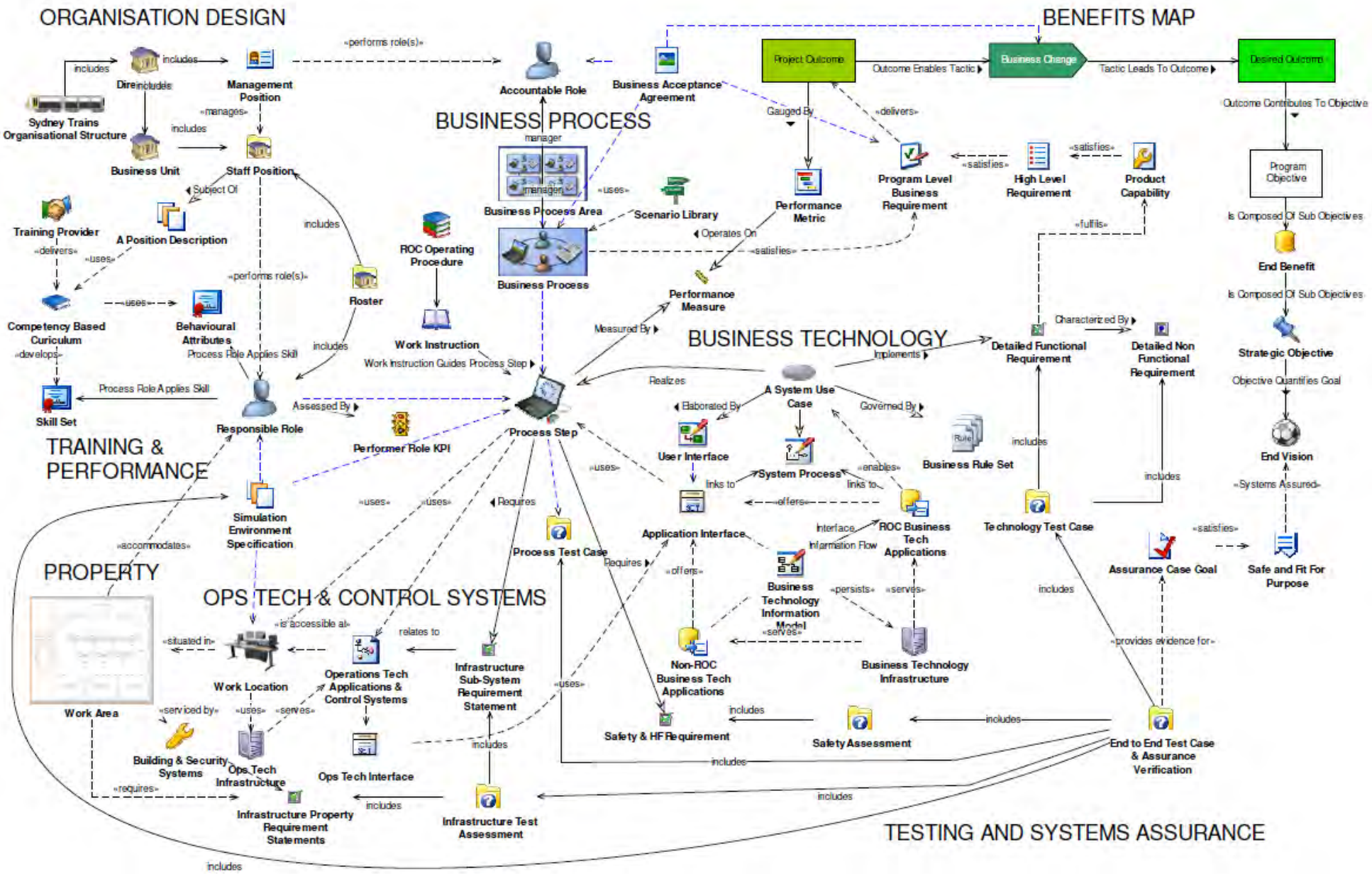

ORGANISATION DESIGN
BENEFITS MAP
BUSINESS PROCESS
BUSINESS TECHNOLOGY
TRAINING & PERFORMANCE
PROPERTY
OPS TECH & CONTROL SYSTEMS
TESTING AND SYSTEMS ASSURANCE
Sydney Trains Organisational Structure
Business Unit
Management Position
Staff Position
A Position Description
Subject Of
Training Provider
Competency Based Curiculum
Behavioural Attributes
Skill Set
Process Role Applies Skill
Responsible Role
Roster
Work Instruction
Work Instruction Guides Process Step
ROC Operating Procedure
Accountable Role
Business Acceptance Agreement
Business Process Area
Business Process
Scenario Library
Performance Metric
Performance Measure
Measured By
Operates On
Process Step
Performer Role KPI
Assessed By
Project Outcome
Outcome Enables Tactic
Business Change
Tactic Leads To Outcome
Desired Outcome
Outcome Contributes To Objective
Program Objective
Program Level Business Requirement
High Level Requirement
Product Capability
End Benefit
Strategic Objective
End Vision
Objective Quantifies Goal
Systems Assured
Detailed Functional Requirement
Detailed Non Functional Requirement
Characterized By
A System Use Case
Realizes
Implements
Elaborated By
Governed By
User Interface
System Process
Business Rule Set
Application Interface
ROC Business Tech Applications
Technology Test Case
Assurance Case Goal
Safe and Fit For Purpose
Simulation Environment Specification
Process Test Case
Work Location
Work Area
Operations Tech Applications & Control Systems
Infrastructure Sub-System Requirement Statement
Non-ROC Business Tech Applications
Business Technology Information Model
Business Technology Infrastructure
Safety & HF Requirement
Safety Assessment
End to End Test Case & Assurance Verification
Building & Security Systems
Ops Tech Infrastructure
Ops Tech Interface
Infrastructure Property Requirement Statements
Infrastructure Test Assessment
includes
uses
performs role(s)
manages
delivers
satisfies
fulfils
Is Composed Of Sub Objectives
develops
accommodates
requires
Requires
offers
enables
persists
serves
is accessible at
situated in
serviced by
relates to
provides evidence for
Interface
Information Flow
links to

Figure 2

3.4 The ROC Systems Assurance and Planning Framework

While the ROC Service Delivery Design Blueprint gives the Program a detailed conceptual picture of the overall solution and targeted end state, the ROC Systems Assurance and Planning Framework (SAPF) informs the Program as to how the blueprint will be implemented.

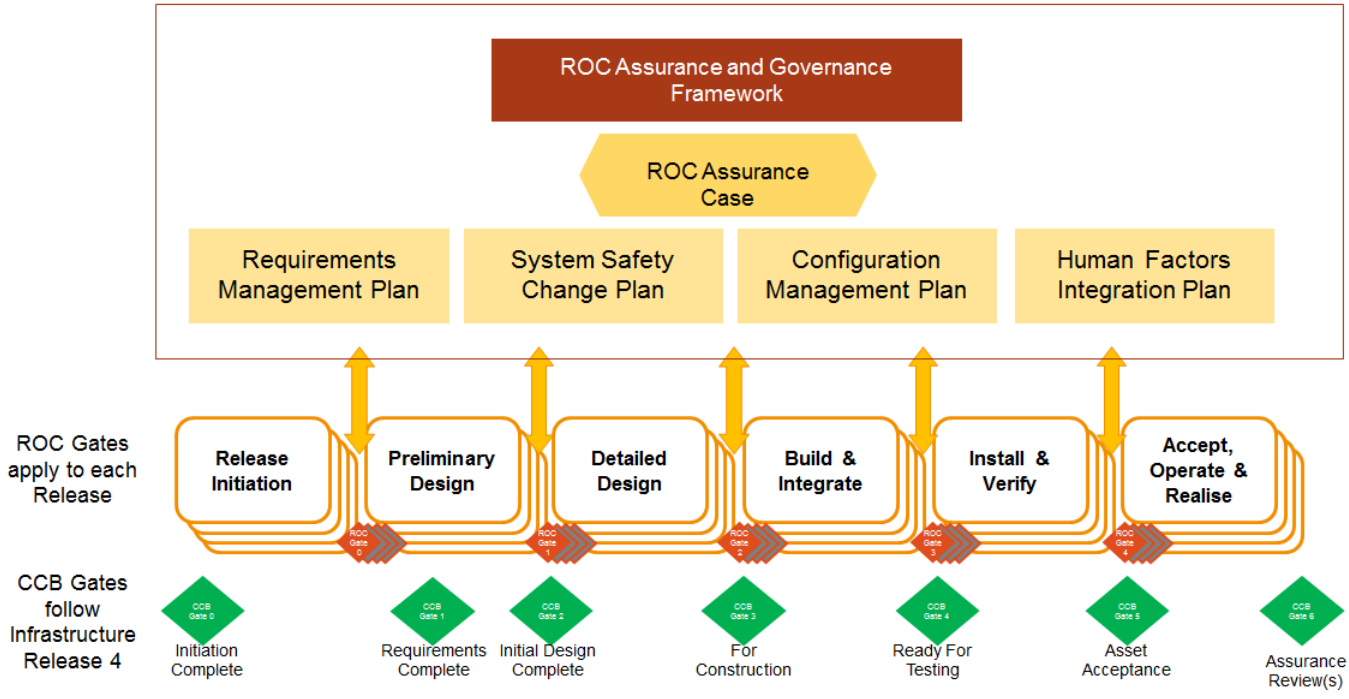
The SAPF is made up of a number of plans including:

- Assurance & Governance Plan
- Requirements Management Plan (RMP)
- Configuration Management Plan (CMP)
- System Safety (Safety Change) Plan
- Human Factors Integration Plan

The SAPF will provide the framework around systems assurance and planning for the ROC Program, helping ensure delivery of the blueprint is compatible with the needs of Program requirements traceability management.

The framework may also include any other plans which will enable the ROC Program to demonstrate assurance to governance bodies and acceptance authorities. Two additional documents which will be produced to supplement the SAPF are the ROC Program Verification & Validation Plan and the ROC Program Test Management Framework (this document).

A conceptual diagram which represents the current, agreed version of the SAPF is presented below.



3.5 ROC Program Phases and Gates

To deliver an integrated Program the ROC will need to blend traditional program management approaches with the following assurance approaches:

- Transport ASA CMAAC gates for Asset Integrity
- Sydney Trains Engineering and System Integrity CCB Hierarchy
- PMLC / PEFM
- Finance Approvals Process
- Managing Successful Programs / Prince2
- The Open Group architecture development method (TOGAF)
- Defence Capability Development (MODAF,DODAF,AUSDAF)

The ROC Program is proposing a set of consistent Phases and Gates which align with external compliance gates as outlined in the diagram below:

Program Delivery Phases & Indicative Deliverables

Program Establishment	Business Case, Business Requirements Specification, Concept of Operations, Current/Future Processes L1-3, Business Changes, Benefits [CMAAC 0]
Program Initiation	System Capabilities (High Level Requirements), Infrastructure SRS, Major System Option Evaluations (vendor qualification), Infrastructure Options, Roadmap / Release Strategy, Systems Assurance Plan, Assurance Case, Current Processes L1-4 [CMAAC 1]

Per Release

Release Initiation	Establish Release Strategy, High Level Scope and Assumptions, Establish Release Working Group
ROC Gate 0	
Preliminary Design	Release specific scope: business requirements (in scope), high level requirements (in scope), IT architecture design, current processes in scope, organisation, infrastructure elements, assurance case level 1-3 Design: Future state process patterns, organisation design principles Detailed design plans for all detail design artefacts
ROC Gate 1	
Detailed Design	Developing detailed requirements & design to build: functional reqs, system use cases, interfaces, architectures, sub system SRS, architect designs, future state process level 4, org design & change plan, role definitions, positions, competencies, test scenarios, assurance case L4, assurance scenarios Detailed plans for all Build & Integrate artefacts including training plan, test plan…
ROC Gate 2	
Build & Integrate	Build and integrate systems, build human performance capability, build facilities Position definitions, establishment, IR, Procedure writing, Provide training to build competency, Workflow config, Unit, System, Integrated, test Detailed plans for all Install & Verify artefacts including E2E test verification, safety assurance verification…
ROC Gate 3	
Install & Verify	Capabilities are available in the live environment (including DR and BCP) but are not in use Final verification and assurance, acceptance by external compliance stakeholders
ROC Gate 4	
Accept, Operate & Realise	Business accepts into service, operational usage commences - people performing new jobs, major systems being used, hand off to BAU, cumulative performance and benefits tracking

Program Close	Conclude benefits tracking, full BAU hand over for operations and maintenance

3.6 ROC Program Verification & Validation

Verification and Validation (V&V) will be applied across a number of ROC Program deliverables. In the context of the SAPF and the ROC Program V&V Plan, there will be many methods by which the Program will assure the quality of deliverables including:

- Documentation review and sign off
- Engineering certification
- Regulatory and legislative compliance
- Various types of testing and test phases
- Combinations of the assurance methods listed above

In the context of the wider Systems Engineering approach, ROC Program testing will be one method by which the Program will:

- Assure the solution and end state delivered are safe, complete, correct and fit for purpose
- Assure Sydney Trains is adequately prepared for the implementation of the solution (or elements of the solution) into business operations

The focus of the ROC Program Test Management Framework is the sub-set of Program deliverables which will be assured by testing.

The ROC Program V&V Plan will:

- Reflect the stream deliverables to be assured in line with the SAPF
- Propose the method by which each deliverable will be assured

Just as the SAPF overarches the ROC Program V&V Plan, the Program Test Management Framework overarches In-Stream and Cross-Stream testing. Where a deliverable is to be assured by testing, it is expected the types of test planning documentation illustrated in the table below will be produced.

ROC System Assurance & Planning Framework		
ROC Program Verification & Validation Plan		
ROC Program Test Management Framework		
Technology Test Strategy	At the time of writing no T&C deliverables have been identified which will be assured by in-stream testing	Infrastructure Test Strategy
Technology Release Test Plans		Infrastructure Sub-Stream Test Plans
Technology Detailed Test Plans		Infrastructure Detailed Test Plans
Technology Test Summary Reports		Infrastructure Test Results
Technology Test Artefacts		Infrastructure Test Artefacts
Cross Stream Test Strategy		
Cross Stream Detailed Test Plans		
Cross Stream Test Summary Reports		
Cross Stream Test Artefacts		

3.7 Test Documentation and Artefact Deliverables

Further to this Program Test Management Framework, for deliverables which will be assured by testing it is expected the following types of documentation and artefacts may be produced:

Deliverable	Deliverable Description	Deliverable Type & Approval Method
Test Strategy	Test Strategy documents apply to the Program and should align to the Program Test Management Framework. The strategy details the overall testing scope, approach, tools, environments, test management procedures, metrics, roles, responsibilities and schedule for test phases to be delivered by each stream. These elements should combine to outline a test strategy which will provide objective evidence the new or changed service meets stakeholder requirements.	Document - Review & Approval
Master Test Plan (MTP)	Master Test Plans apply to a Release and should align to the Program Test Management Framework and the Test Strategy. For each Release the Master Test Plan details the testing scope, approach, tools, environments, metrics, roles, responsibilities and schedule for test phases to be delivered by each stream.	Document - Review & Approval
Detailed Test Plans (DTP)	DTP's should be produced for each test phase and align to the Test Strategy and Master Test Plan. They provide details around the schedule, scope, approach and technical considerations. The DTP identifies resource requirements, communicates roles and responsibilities and articulates the time frames tasks need to be performed within. Any deviation from the Test Strategy or MTP should be highlighted in the DTP.	Document - Review & Approval
Test Objectives Matrix (TOM)	Test objectives can be derived from the business, functional and/or system requirements depending on the test phase. Test Objectives must be mapped to Requirements Traceability Matrix (RTM) for traceability and to demonstrate coverage of requirements. The Test objectives describe "what is to be tested".	Document - Review & Approval
Test Cases	The scenarios to be executed during testing. Test cases are derived from and should cover of the test objectives, including both positive and negative scenarios. Test cases include details around 'how' the testing will be executed in order to meet the test objective(s). They should be written at a level that takes into account the experience of the tester and the risk level of the test. Existing artefacts should be leveraged wherever possible when preparing test cases.	Document - Review & Approval
Test Results	Specific test results, like screenshots, application reports & logs required in order to verify the execution outcome of a test case. Test results will be produced for each test case executed and be stored in HP ALM, including pass/fail status.	Artefact – Approved via Review & Approval of the TSR
Defects	Each defect identified during testing will be documented in the HP ALM defect Management system, where progress and resolution will be tracked.	Artefact – Approved via Review & Approval of the TSR
Periodic Status Reports	Regular reports which outline test status, progress, major issues, resource issues and any schedule impacts. The test statistics and analysis support daily management and evaluation of test status and corrective action where required in order to meet milestone delivery dates.	Artefact –Review & Approval not required
Test Summary Report (TSR)	A report produced at the conclusion of a test phase to summarise test results measured against the test exit criteria for the test phase.	Document - Review & Approval
Automation Test Suites	Suite(s) of automation test scripts. Creation commences during System Integration Testing for reuse in subsequent integration test phases	Artefact – Approved via Review & Approval

4 Document Information

4.1 Document Evolution

In January 2015 representatives from within the ROC Program agreed an interim version of this document (v1.0) was fit to inform technology vendor(s) participating in the High Level Design Phase of the Program. It provided an early, high level view of the test framework which will be applied to the ROC Program. Vendor(s) required a clear understanding of their responsibilities in relation to testing in order to produce a Best and Final Offer (BAFO) early in 2015. The BAFO was one of a number of deliverables vendor(s) produced during High Level Design and was an important input in the context of Sydney Trains technology vendor evaluation and selection criteria.

This next iteration has been produced to:

- Reflect the evolution in thinking related to the Program Test Management Framework between January 2015 and January 2016
- Align with ROC Release 1, Gate 2 deliverables
- For internal and external Program stakeholder review and approval to provide an agreed Program baseline

This document may need to be updated within the lifecycle of the ROC Program if thinking around the Program Test Management Framework evolves in a material way. An outline of the evolution the document has been through and may go through in the future is outlined below:

- V0.1 – First draft internally reviewed by the ROC Program team
- V1.0 – Document updated with feedback from the review of v0.1. Agreed interim version was issued to inform technology vendors at the commencement of the program High Level Design Phase
- V1.1 – Document updated for Release 1, Gate 2 milestone and internally reviewed by the ROC Program team
- V1.2 - Document updated with feedback from the review of v1.1 and distributed for internal Program endorsement
- V1.3 - Document distributed for external stakeholder review
- V2.0 – Document updated with feedback from external stakeholder review and distributed for endorsement/approval by internal and external Program stakeholders to provide an agreed baseline

This approved baseline would then be subject to change control. If thinking around the Program Test Management Framework evolves in a material way as the program moves through the Design and Delivery Phases, further iterations of this document may be produced for review and approval.

If updates are required, a new version of the document will be formally issued to stakeholders both internal and external to the ROC Program for review and feedback. The document would then be updated based on feedback from the review and reissued for formal sign off to provide a new agreed baseline. At any point in time the approved ROC Program Test Management Framework should serve as a reference for subsequent, more detailed testing documentation which will be produced by the Program.

4.2 Document Purpose

This document provides a high level view of the in-stream testing to be performed within each Program delivery stream. It also outlines how these tested components will be brought together for cross-stream testing to verify the E2E ROC solution at a Program level.

Producing the second iteration of this document for the Release 1, Gate 2 milestone limits the level of detail which can be included as the following types of information may not be fully defined:

- Implementation and Support Contracts with selected technology vendor(s)
- Outputs of the Program Detailed Design phase(s)
- Data Architecture
- ROC Program BCP Strategy
- Program Implementation Plans and Release Management Strategy
- Program Test Environment Management Plan

Despite these limitations, there are a number of benefits in developing a second iteration of the Program Test Management Framework for Release 1, Gate 2 including:

- Providing Program stakeholders with an early, high level view of how ROC Program components will be tested in order to gain high level agreement around the Program Test Management Framework
- Establish an agreed framework around test approach, language and guidelines upon which subsequent, more detailed testing documentation will be based
- Define test management and governance procedures and controls for the ROC Program

Given the different disciplines in play across the ROC Program it is unlikely a ‘one size fits all’ approach to testing will be appropriate. It is not the intention of this document to be prescriptive or mandate a specific approach across the entire Program. This framework should be applied to Program Testing where it is appropriate to do so. Accepted approaches from different domains and disciplines can be integrated into this framework as required.

Note - In the event of any inconsistencies between this document and the contract(s) with Program vendor(s), the terms of the contract(s) shall prevail to the extent of the inconsistency.

4.3 Document Scope

This document will provide a high level view of the testing required in order to gain acceptance to implement Releases of the ROC Program solution into Business operations.

Required activities which occur as part of the implementation/deployment process or post operational go-live will be within the scope of the ROC Program, but outside the scope of this document. Examples include:

- Post Implementation Verification (PIV) is an activity undertaken as a step in the Production Implementation Plan to verify technology system(s) have been successfully deployed to the Production environment, are ready for business operations to ‘go-live’ and deployment roll back is not required. PIV will be detailed within implementation documentation
- Handover and acceptance of technology application maintenance and support to Team(s) within Sydney Trains

4.4 Intended Audience

The ROC Program Test Management Framework has a broad audience including:

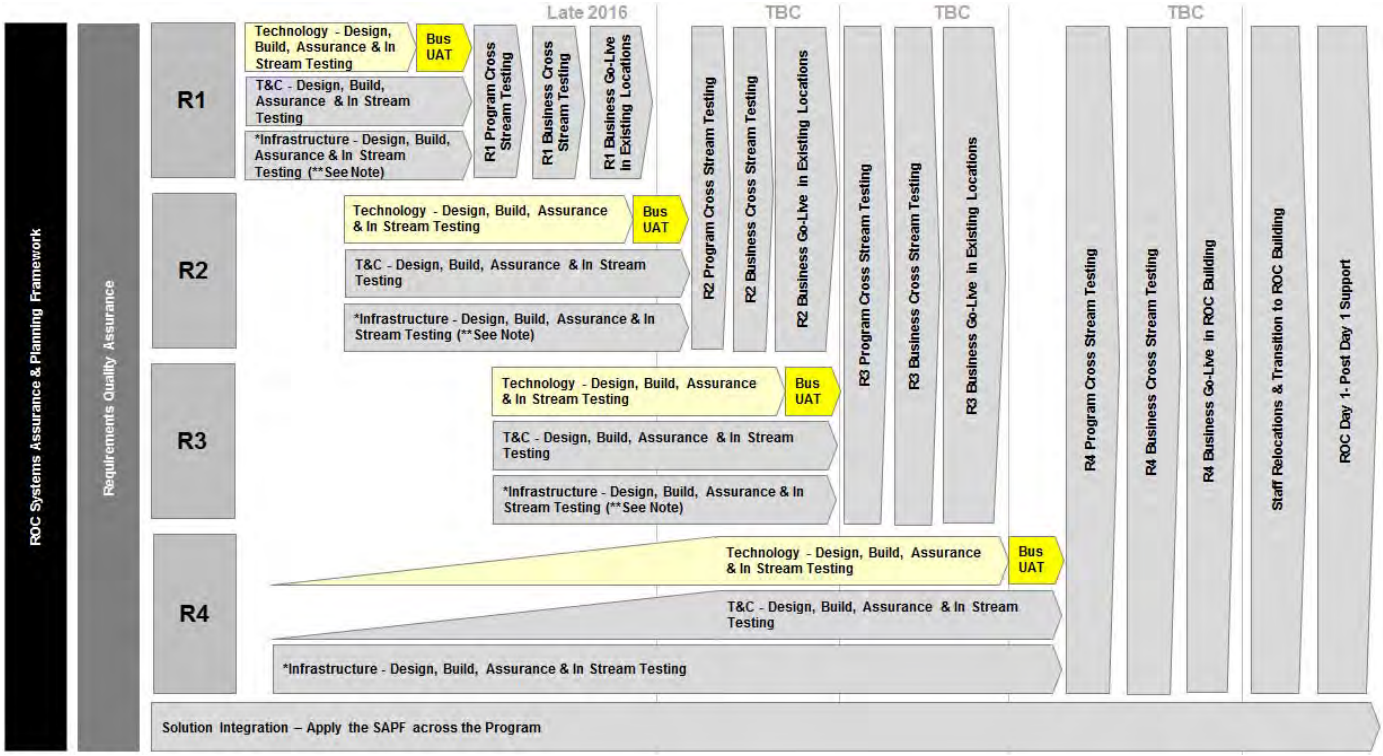
- The ROC Program Team
- ROC Program vendor(s)
- Impacted areas and stakeholders within Sydney Trains
- Impacted areas and stakeholders outside Sydney Trains
- Interdependent Programs

This audience and their respective roles and responsibilities are outlined in the 'Document Approvals, Endorsement and Distribution' section of this document.

5 In-Stream Technology Testing

In-stream testing refers to the testing performed on the solution components of a single ROC Program delivery stream.

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Technology testing refers to the areas indicated below:



The ROC Technology Stream went to market with an RfP to deliver four sub-projects:

- SP1 – Day of Operations Train Timetabling System (DTTS)
- SP2 – Incident Management System (REM)
- SP3 – Customer Information Management System (CIMS)
- SP4 – Systems Integrator

In addition, the Technology Stream will also deliver:

- Operational Visual Display System (OVDS)
- Changes to existing Sydney Trains applications

Some of the Systems Integrator early documentation deliverables include:

- ROC Technology Test Strategy - An overview of the testing which will be applied to new technology systems and changes to existing systems, including the quality target metrics technology deliverables will be measured against.
- ROC Technology Environment Management Strategy (TEMS) - The non-Production environments required to support the Test Strategy and deliver the Program, including how the environments are to be managed.
- System Test Plans - Testing which is to be applied to new technology systems and changes to existing systems up to and including System Acceptance Testing.

For early Program planning purposes the ROC Roadmap has the Program being delivered via four Releases. It is anticipated each technology system/change delivered will progress through the test phases listed below, which are detailed further within Appendix B of this document.

- Shakedown Testing
- Unit Testing (UT)
- System Testing (ST)
- System Acceptance Testing (SAT)
- System Integration Testing (SIT)
- Load & Performance Testing (L&P)
- Security & Penetration Testing (S&P)
- Automated Regression Testing
- Program User Acceptance Testing
- Business User Acceptance Testing

To ensure the integrity of component being tested, in conjunction with each test phase it is also expected an appropriate level of regression testing will be performed.

This approach will need to be ratified during the program Detailed Design Phase(s), then reflected in the ROC Technology Test Strategy document and subsequent Technology test planning documentation and artefacts.

The ROC Program will seek to produce consistent technology testing related documentation deliverables, particularly when these deliverables are to be reviewed by stakeholders outside of the Program. Sydney Trains/ROC Program templates should be used as a benchmark, be modified as little as possible and by mutual agreement.

Technology In-Stream testing and assurance will include formal business acceptance of Technology Stream components. On a Release by Release basis, assured technology components will be brought together with assured components from the T&C and Infrastructure Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the Technology, T&C and Infrastructure Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

5.1 Technology In-Stream Testing – Release 4

The early and gradual ramp up of Technology In-Stream Assurance and Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new technology solutions into existing locations. As these new technologies will transition into the ROC facility once it has been built, the Technology Stream is in fact delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3.

Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the Technology

Stream to validate infrastructure designs against Technology components for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

5.2 Configurable Off the Shelf (COTS) Products and Defects

The ROC Program principles which underpin the technology design and implementation approach are restated below:

- The overarching philosophy of the technology program is to “Buy not Build” technology capability to meet the identified business needs
- New technology systems to be introduced will be ‘off the shelf’ to the extent that is practicable. i.e. configuration of Licensed Software, not changes to source code
- New technology business processes will be implemented as near to ‘out of the box’ as is practicable i.e. the existing business process will change to align with the processes that are provided with new systems
- The above principles apply provided there is no breach of regulatory requirements or internal policies

In response to these principles, the Program’s technology RfP sought to identify products which could deliver the required functionality via configuration of COTS products without the need to customise the base products. Despite this, the risk remains detailed design, build and testing could identify required functionality which can only be delivered via a change to the underlying COTS products. Given the lead time required to change the base product can be much greater than the time required to change product configuration, this represents a potential risk to the Program schedule.

The Program Test Management tool will be set up to clearly differentiate between:

- Defects which can be resolved via changes to product configuration
- Defects which need to be resolved via a change to the underlying COTS product

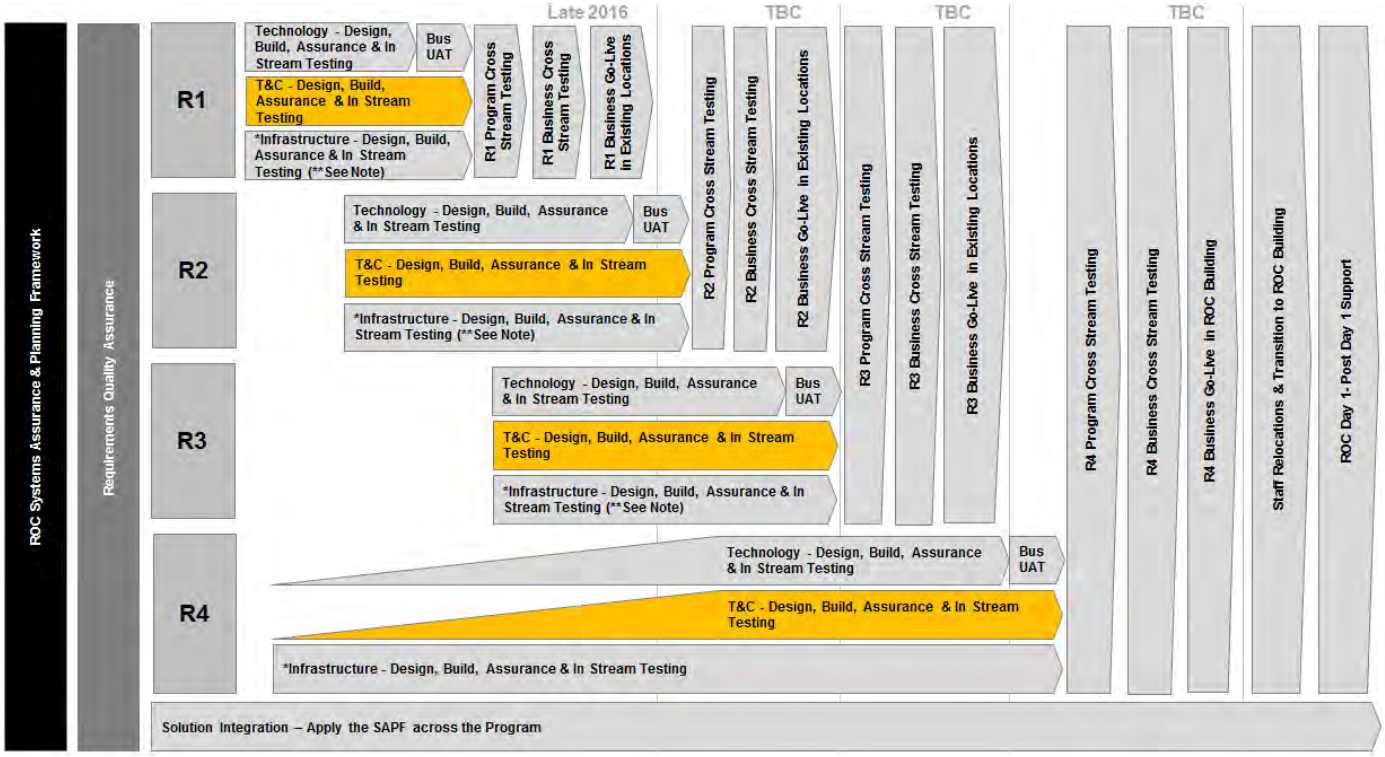
While the ROC Program may raise, track and manage both types of defects in HP ALM, fixes for the latter are expected to be delivered via product vendor roadmap(s) and internal processes. These activities would be cross referenced and tracked in HP ALM.

5.3 Enterprise Release Management

Within Sydney Trains, technology changes being delivered to the Production environment fall under Enterprise Release Management (ERM), which co-ordinates the scope of Enterprise Releases, impact assessments and gates Release content. One of the gates changes must pass through is the Change Approval Board (CAB), which provides the final approval required prior to Production deployment. It is anticipated ROC driven technology changes including both new systems and changes to existing applications will fall under ERM and require CAB approval prior to being deployed to Production.

6 In-Stream Transformation and Change Testing

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Transformation and Change (T&C) testing refers to the areas indicated below:



The T&C Stream solution components which are expected to require a level of assurance include:

- Current Processes & Future Processes
- Interim/BCP Processes
- IR/OD Strategy
- Role Definitions
- Workload Baselining & Assessment
- Procedures
- Work Instructions
- SME Training Dev & Delivery
- End User Technical Training Dev & Delivery
- End User Behavioural Training Dev & Delivery

Under the SAPF, the T&C Stream will develop an assurance strategy and plan(s) which will articulate the method by which each of these components will be assured.

On a Release by Release basis, the following T&C components will be used to verify technology systems delivered meet business requirements by testing the technology within the context of business processes and roles.

- Role Definitions
- Future Processes
- Procedures
- Work Instructions

As such, these T&C components will form the basis of Technology UAT scenarios and will need to be adequately assured within the T&C Stream to ensure they are mature enough to be relied upon as inputs to Technology UAT design.

T&C In-Stream testing and assurance will include formal business acceptance of T&C Stream components. On a Release by Release basis, assured T&C components will be brought together with assured components from the Technology and Infrastructure Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the T&C, Technology and Infrastructure Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

6.1 T&C In-Stream Testing – Release 4

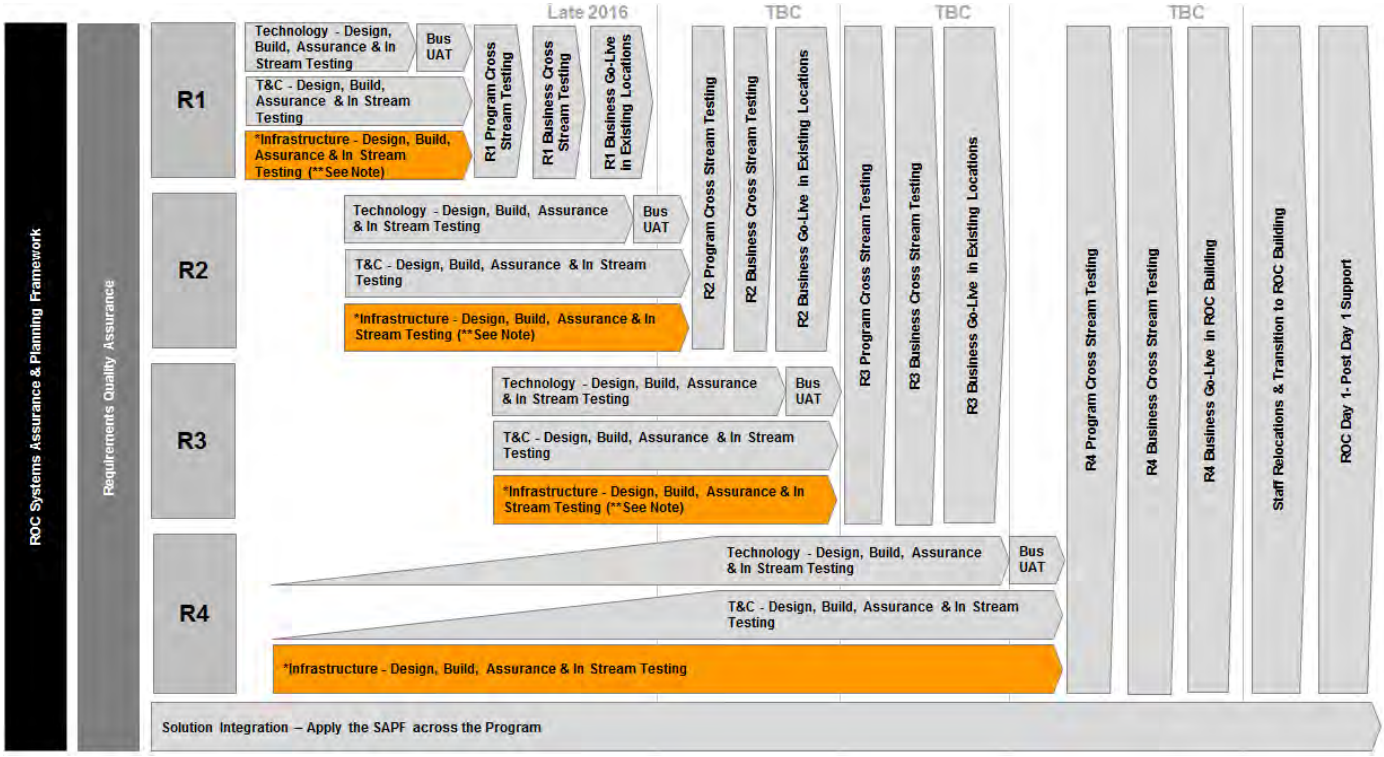
The early and gradual ramp up of T&C In-Stream Assurance and Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new processes and ways of working into existing locations. As these new ways of working will transition into the ROC facility once it has been built, the T&C Stream is in fact delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3.

Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the T&C Stream to validate infrastructure designs against T&C components for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

7 In-Stream Infrastructure Testing

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Infrastructure testing refers to the areas indicated below:



The ROC Program Infrastructure Stream has been structured into three sub-streams being:

- Operational Technology Systems
- Signalling Control Systems
- Property, including Security, Architecture, Building Shell and Building Systems

While the primary focus of the Infrastructure Stream will be delivery of the new building and the systems which reside within it, there may also be Infrastructure components delivered as part of Releases 1, 2 & 3.

Each Infrastructure sub-stream is expected to produce a number of components which will require testing and assurance. Under the SAPF, the Infrastructure Stream has developed an Infrastructure Assurance Plan (IAP), which articulates the method by which each of these components will be assured.

Where In-stream testing of Infrastructure components is required, it will be undertaken as part of the commissioning and testing processes which will be carried out by the ROC Infrastructure delivery stream. These processes must comply with Australian Standards, Sydney Trains and/or TfNSW Engineering Specifications and achieve required certification(s) and/or demonstrate regulatory compliance as required.

Infrastructure In-Stream testing and assurance will include formal business acceptance of Infrastructure Stream components. On a Release by Release basis, assured Infrastructure components will be brought together with assured components from the Technology and T&C Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the Infrastructure, T&C and Technology Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

7.1 Infrastructure In-Stream Testing – Release 4

The early and gradual ramp up of Technology and T&C Assurance and In-Stream Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new technology solutions and new ways of working into existing locations. As these new technologies and ways of working will transition into the ROC facility once it has been built, is the Technology and T&C Streams will in fact be delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3. As such, the solutions implemented in these earlier Releases will inform the design of the new facility.

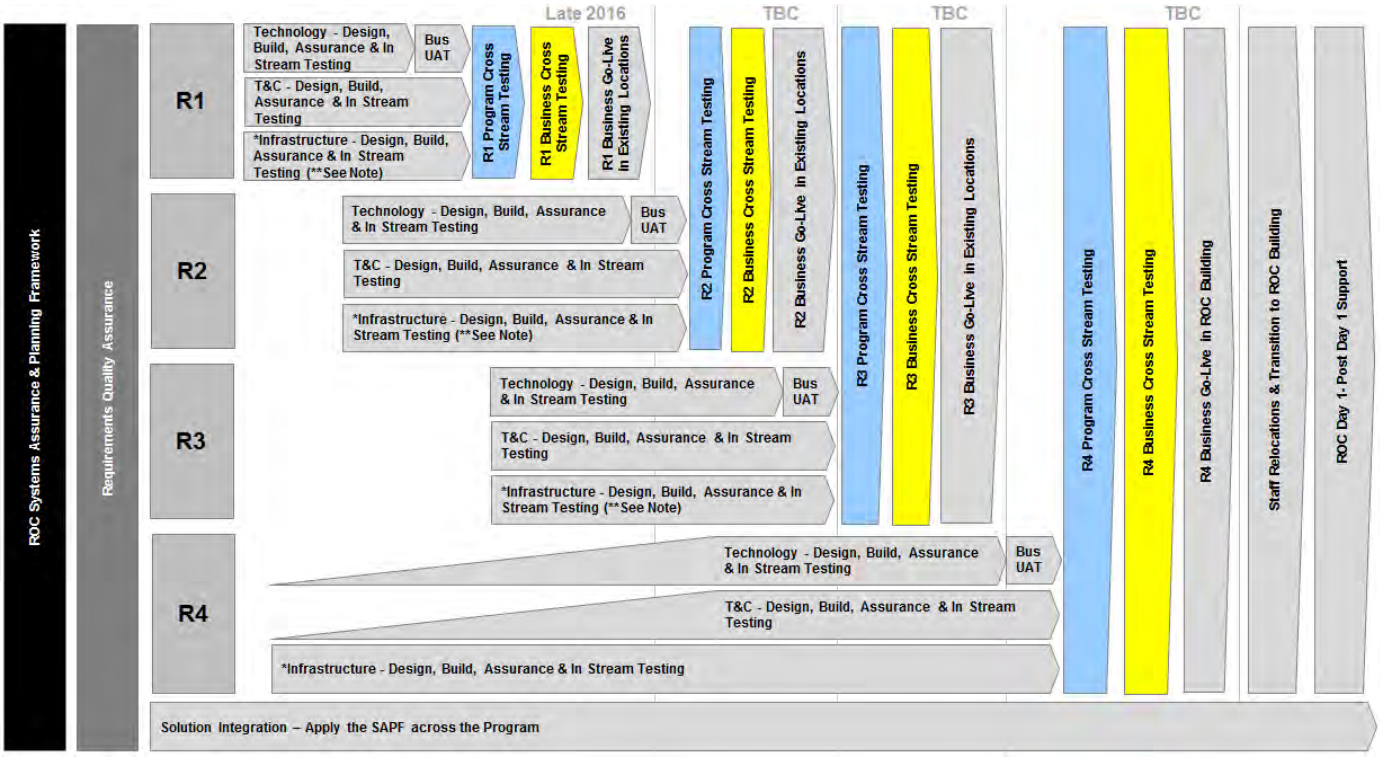
Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the Technology and T&C Streams to validate infrastructure designs against the components of these streams for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

8 Cross-Stream Testing

Cross-Stream testing refers to the integrated testing performed across components from more than one ROC Program stream.

The Business Continuity & Program Testing stream will lead all Cross-Stream test phases on behalf of the ROC Program. Program streams, Portfolio Teams and vendor(s) will be expected to support Cross-Stream testing and specifically support any of their components being tested.

In the context of the ROC Program Test Management Framework Overview Diagram, cross-stream testing refers to the areas indicated below:



8.1 Cross-Stream Testing

Test Phase Definition:	Cross-Stream Testing will provide an opportunity to simulate 'new ways of working' as realistically as possible up to and including the boundaries and touch points with existing, unchanged Business processes. This will involve testers acting in new roles, using new business processes, technology and infrastructure to exercise the ROC solution. Components of the solution can be refined and scenarios re-run as required to demonstrate the solution provides the business with a safe, workable and robust way to manage operations which is also compliant with Human Factors requirements. In-Stream assurance and testing provides risk mitigation against defects being identified during Cross-Stream Testing. This is important given the resources, effort and logistics required to run Cross-Stream Testing scenarios are expected to be significant and the lead times to deliver certain defect fixes into Cross-Stream Testing will be considerable. A small subset of ROC processes will be identified and agreed to be the Cross-Stream test scenarios for each Release based on criteria of business criticality, frequency of use, risk and functional coverage. A ROC test principle states program testing should occur prior to business testing. Program test resources will execute Program Cross-Stream Test scenarios in order to identify and resolve defects prior to Business Cross-Stream Testing. Benefits of this approach include: • Use of professional test resources to save Business resources from 'testing fatigue' • Build program confidence prior to business exposure Business resources will then execute Business Cross-Stream Testing. Benefits of this approach include: • Duration, iterations and defects greatly reduced by program testing • Business resources initial experience with the ROC solution is positive • Positive word of mouth from business testers back to their teams The success of this approach can be measured by analysis of defects identified during Cross-Stream Testing. If defects which could have been identified and resolved during In-Stream testing and assurance are found during Cross-Stream Testing we would conclude In-Stream testing and assurance activities could have been more effective. If this is the case, further analysis should be conducted to determine how these activities can be improved for future Releases. If Cross-Stream Testing identifies and resolves the types of defects which can only be identified by bringing together the components of ROC Program streams and simulating 'new ways of working' as realistically as possible, we can conclude Cross-Stream Testing has served its purpose and In-Stream testing and assurance activities have been effective. It is envisaged heavily leveraging the test planning and preparation artefacts from In-Stream testing will be the most efficient way to deliver Cross-Stream Testing.

Test Phase Owner:	• Business Continuity & Program Testing Stream
Test Resources:	• Program Cross-Stream Testing – ROC Program resources • Business Cross-Stream Testing – Sydney Trains business users (ROC SME's) • Vendor, System Integrator and APD Test support via participation in defect triage, defect rectification, progression and regression testing of defect fixes for delivery to Cross Stream Testing as required
Test Governance:	• ROC Program
Deliverables:	• Cross-Stream Test Strategy • Detailed Test Plan (DTP) for Cross-Stream Testing of each Release • Test Objective Matrix (TOM) • Test Scenarios • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for Cross-Stream Testing of each Release
Test Location:	Release 1, 2 & 3 - Expected to be the Belmore BCP facility, which will provide additional assurance Belmore is fit for purpose as a ROC BCP facility. Release 4 - Expected to be the ROC building, which will provide additional assurance the ROC is fit for purpose and ready for operational go-live.
Test Environment:	ROC Cross-Stream environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	The Business Continuity & Program Testing Stream should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts.
Test Tool:	HP ALM
Test Artefacts:	Cross-Stream testing scenarios, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program

8.2 Requirements Quality Assurance (RQA)

The objective of RQA is to identify and remediate ambiguity, conflicts, inconsistencies, incompleteness or redundancy in requirements and/or specifications prior to a component or system being built. By improving the quality of requirements, RQA can enable design acceleration and decrease the duration and iterations of test phases as potential defects are identified and remediated prior to build.

The ROC Program has engaged an external consultancy with the tools, systems and expertise to provide an RQA 'proof of concept' for ROC Release 1. If this proof of concept is found to have been a good investment from a cost versus benefit perspective, the ROC Program may look to apply the approach more broadly across the Program. This activity will complement both the Requirements Management Plan (RMP) being delivered under the Systems Assurance and Planning Framework (SAPF) and the use of Holocentric as outlined below.

- The RMP provides an integrated approach for the management of requirements on the ROC Program including requirement definition, capture, documentation, traceability, baselining, version control and change management
- As the ROC Program's requirements management tool, Holocentric will be used to manage requirements in line with the recommendations within the RMP
- RQA will help to ensure requirements entered into Holocentric and managed in accordance with the RMP are of a high quality

8.3 Human Factors

The Sydney Trains rail network is a technical system, in which people are as much an integral part as any technology system or mechanical component. Technical systems are becoming more wide-reaching and complex, so it is essential to consider their impact on:

- Individuals, their knowledge, competence, skills, and abilities
- Local conditions, the workplace and how people perform as a team
- How the organisation employs people as valuable assets and invests in them

Human Factors supports the design of rail systems which optimise the contribution of rail staff. This can include the design of cabs, signalling panels, training courses and materials, management, recruitment processes, and control rooms. Applying human factors knowledge at the start of a project can reduce the need for re-design once systems have entered service, increase efficiency, reduce the potential of staff turnover, and increase productivity for the organisation as a whole.

On this basis, Human Factors will be a consideration throughout the ROC Program and within the design phases for T&C, Infrastructure and Technology Stream solution components.

A Human Factors Integration Plan will be delivered under the SAPF. This plan will outline how Human Factors requirements and assurance will be embedded within the ROC Program Design, Delivery and Testing Phases.

Cross-Stream Testing will represent a further opportunity to confirm how all the Human Factors elements of each stream come together and interact across the ROC program solution.

8.4 Early Business Benefits

In keeping with the sub-set of program principles listed below, ROC will look to identify opportunities to implement elements of the ROC Solution into current business locations prior to the new ROC building being ready to occupy, thereby delivering early benefits to the business.

- New technologies will be implemented in a phased roll out which optimises the balance of technical risk, business benefit and the level/rate of impact on affected users
- The program will avoid a “big-bang” implementation
- The technology roll out can occur prior to the completion and transition of the business users into the new ROC facility, provided that the business benefits associated with the new technology can be realised

Early realisation of these benefits will largely be enabled by the implementation of ROC Releases 1, 2 & 3 into current Business locations. Cross-Stream Testing will be applied to these Releases prior to any elements of the solution being operationalised. It is expected Release 4 Cross-Stream Testing may occur from the new ROC Building prior to staff relocations and ROC Day 1 operational go-live.

Delivery of ROC Program changes into Business operations are dependent on both the deployment of new/change technology into the Production environment and business readiness to go-live. Wherever possible the ROC Program plans to decouple these two activities.

9 Appendix A - Test Management Procedures

The general Test Management Procedures which will be adopted by the Technology Stream of the ROC Program are outlined in the sections below and are applicable to both internal Sydney Trains teams and vendor(s). These approaches may be applied to other Streams of the Program to the extent they are appropriate.

The test process typically involves the following stages:

- The **Engagement and Estimation** stage was largely conducted during preparation of the ROC Final Business Case
- The **Planning** stage lays the foundation for the test effort. The primary outputs of the planning stage are the ROC Program Test Management Framework (this document) and resulting Test Strategy documentation which will be produced by the program

Testing is an iterative process. Each test phase will transition through the following stages:

- **Preparation:** This stage builds on the initial planning effort. Detailed Test Plans DTP(s), Test Objectives Matrix TOM(s) and test cases are produced in preparation for test execution. Other key deliverables from this stage include the Technology Test Strategy, the Technology Environment Management Strategy (TEMS) and establishment of the test environment(s).
- **Execution and Reporting:** This phase involves execution of testing, tracking and reporting test execution and defect status. At the conclusion of execution, when the exit criteria have been met a Test Summary Report (TSR) is produced. The TSR provides an overview of the execution effort, associated test metrics, any major outstanding issues and generally provides a recommendation based on the test results.
- **Evaluation** is final stage of testing. The purpose of evaluation is to reflect, review and evaluate the overall test effort and activities to identify the things which worked well and should be retained within the testing process, as well as any opportunities to improve the way testing is conducted.

The execution of each of the nominated test phases often requires the involvement of many stakeholders. Test management and coordination becomes a complex undertaking. In particular the identification, coordination and availability of testing resources can be challenging. All personnel involved with the test effort need to understand their contribution as outlined in the 'Roles and Responsibilities' sections within test planning documentation.

The Test Strategy, Test Plans and associated test deliverables, are required as part of the overall Test Management Control System. They enable standardisation of the approach and management of testing, integrated planning and scheduling activities. These test management controls work in-conjunction with the Program Management Plan and the test execution controls as outlined in the following sections.

9.1 Entry and Exit Criteria

The following are examples of general test entry and exit criteria. Any additional criteria specific to particular test phase(s) should be called out in the DTP for that test phase:

Entry Criteria:	• Artefacts which test planning and preparation are dependent upon have been approved e.g. Requirements and Design documents • Test planning and preparation artefacts have been approved and/or accepted e.g. Test Strategy, MTP, DTP, TOM, test cases/scripts • Approved test cases have been loaded into the test management tool and testers have been granted the required level of access • Formal defect management and reporting process established • Availability of resources required to execute testing has been confirmed • Availability of resources required to analyse and resolve defects has been confirmed • Defect rectification SLA's are in place • Release notes describing the deployment package are available and include relevant details relating to the base product, code, configuration, reference data as required, plus installation/migration activities, supplied fixes, new features, any known defects and workarounds • Correct version(s) of deployment package(s) have been deployed to the test environment(s) • Test environments are available and in a fit state as confirmed by Shakedown Testing • Correct test environment access and credentials have been granted to testers • Test Data of sufficient quality, quantity and diversity to enable testing is available • Previous test phase exit criteria has been met and where applicable the TSR has been reviewed and approved by relevant stakeholders Once all test entry criteria have been met a test phase may commence. Where entry criteria have not been met the test phase cannot commence. Any deviation from the test entry criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management. If appropriate to do so, a risk or issue should be raised in the ROC Program DRICA-SBA and be managed via the ROC Program Risk/Issue Management process.

Exit Criteria:	• All test cases have been executed and the outcome recorded in the test management tool. An explanation has been provided for any test case which has not been executed • All defects identified during the test phase have been recorded in the test management tool and are available for review • No Severity 1 or Severity 2 defects outstanding • An agreed action plan is in place to address outstanding severity 3 and severity 4 defects including target resolution time frame The number of outstanding severity 3 and severity 4 defects and the cumulative impact of these defects on the overall solution must be accepted by Sydney Trains. Once all test exit criteria for a test phase have been met a TSR may be prepared. Where exit criteria have not been met the test phase should not conclude. Any deviation from the agreed exit criteria would need to be approved by the ROC Program Test Manager in consultation with ROC Program Management. If appropriate to do so, a risk or issue should be raised in the ROC Program DRICA-SBA and be managed via the ROC Program Risk/Issue Management process.

9.2 Test Phase Gate Meetings

Program Test Teams (with stakeholder participation as required) will conduct test gating meetings prior to commencement of test execution for each Program test phase. These meetings will serve as a checkpoint to determine whether:

- Exit Criteria from previous test phase have been met
- Entry Criteria for the following test phase have been met
- Any other risks, issues or constraints exist which need to be reviewed in the context of the coming test phase

9.3 Test Phase Suspension & Resumption

If any defects identified seriously impact test progress the Program Test Manager, in consultation with Program Management may elect to suspend testing. Criteria which might justify test suspension include:

- Hardware/software is not available at the times indicated in the project schedule
- Product under test contains one or more critical defects which seriously prevent or limit testing progress
- Assigned resources are not available when needed for test execution and/or support

If testing is suspended, resumption will occur when the problem(s) which caused the suspension have been resolved. Where the cause of suspension is a critical defect, the fix must be successfully verified by the test team before testing resumes.

9.4 Risk Based Testing

Risk will often be a critical consideration when the ROC Program Management is making decisions. At its core, testing is about quantifying and mitigating risk.

The ROC Program will adopt a risk based approach to testing which will assist with understanding and managing risk. This approach involves the prioritisation of test cases into essential, high, medium and low using criteria based on likelihood and/or impact of failure including:

- Priority of requirement(s) being tested
- Business criticality of the function
- Frequency of use
- Functional coverage

So far as it is feasible to do so, tests will be executed in priority order. Benefits of this approach include:

- Defects related to high priority test cases are identified earlier in a test phase
- At any point in time tests not executed are at the lower end of the priority scale

If test execution were to come under schedule pressure there are a number of options available to the Program including:

- Increasing resources working on testing
- Working extended hours and/or weekends
- Reducing the scope of testing to be executed

The latter can introduce an increased level of risk. In the event ROC Program Management need to consider reducing the scope of a test phase or exiting a test phase prior to the exit criteria being met for any reason, one of the primary considerations will be the level of risk the Program and stakeholders are prepared to accept.

Test related information can be produced to help decision makers and stakeholders quantify the risk associated with any such decisions. This information would be a key input to gaining the understanding and agreement required to deviate from the Program's Test Management Procedures.

9.5 Test Tools

The following test tools and applications will be used by the ROC Program:

- HP ALM is Sydney Train's enterprise test management tool. Test teams (both Sydney Trains and vendor) will utilise HP ALM for the management of manual test execution and defect management from SAT onwards as a minimum
- LoadRunner is Sydney Train's enterprise load and performance test management tool. It helps measure the behaviour and performance of a system under load. LoadRunner can emulate simultaneous and realistic system usage by thousands of users across an enterprise and employs performance monitors to identify and isolate potential problems
- Quick Test Professional is Sydney Train's enterprise automated regression test management tool. It can provide functional and regression test automation for software applications and environments

The test tools are administered by the Testing and Quality Assurance Services Team within TfNSW. First point of contact for test tool support should be the respective test phase Test Lead, then the Test Manager. If the matter cannot be resolved locally the Test Manager should escalate to the Testing and Quality Assurance Services Team.

9.6 Test Co-ordination

During test execution regular co-ordination meetings will be held between test team(s), Program representatives, IT Portfolio Team(s), Business stakeholders, Project Manager(s) and vendor(s). The purpose of these meetings is to report on progress and address any issues raised. The standing agenda for the meetings is as follows:

- Review test progress against forecast
- Review defects raised against program quality targets including:
  - Number of defects raised
  - Severities
  - Phase Containment Effectiveness (PCE) - Defects found in the current test phase which 'should' have been identified and resolved in an earlier test phase
- Review test resourcing levels against forecast
- Review test risks
- Review test issues
- Any other business

9.7 Test Status Reporting

During test execution test status reporting will typically occur on a daily basis. Status reporting will be distributed by email, which will be supplemented by regular co-ordination meetings and conference calls. The phase Test Manager is responsible for producing and distributing test status reporting, which will typically detail the following:

- Test progress against forecast summarising total tests by status
- Total defects raised summarised by severity, priority and status
- Plan for the following period
- Risks and/or issues
- Schedule and outlook

9.8 Defect Management

HP ALM will be used as the Program's test management tool.

The objective of defect management is to ensure all defects encountered during the course of testing are appropriately raised, detailed, evaluated, prioritised, reported, resolved, verified and closed.

This document provides details on how defects are to be managed for Program test phases including definitions of defect status, pass & fail criteria and defect severities and priorities.

The high level process by which defects will be managed on the ROC Program is outlined below:

- Any anomaly identified during testing should initially be raised in HP ALM noting the test case which was being executed when the defect was encountered and capturing sufficient relevant details to facilitate analysis of the defect
- Defects raised will be triaged and assigned to the most likely resolver group
- The resolver group should update the defect with details of the defect cause, nature of the fix applied, confirm a successful retest of the fix, successful regression testing if appropriate and the software version in which the fix will be delivered to the tester for verification

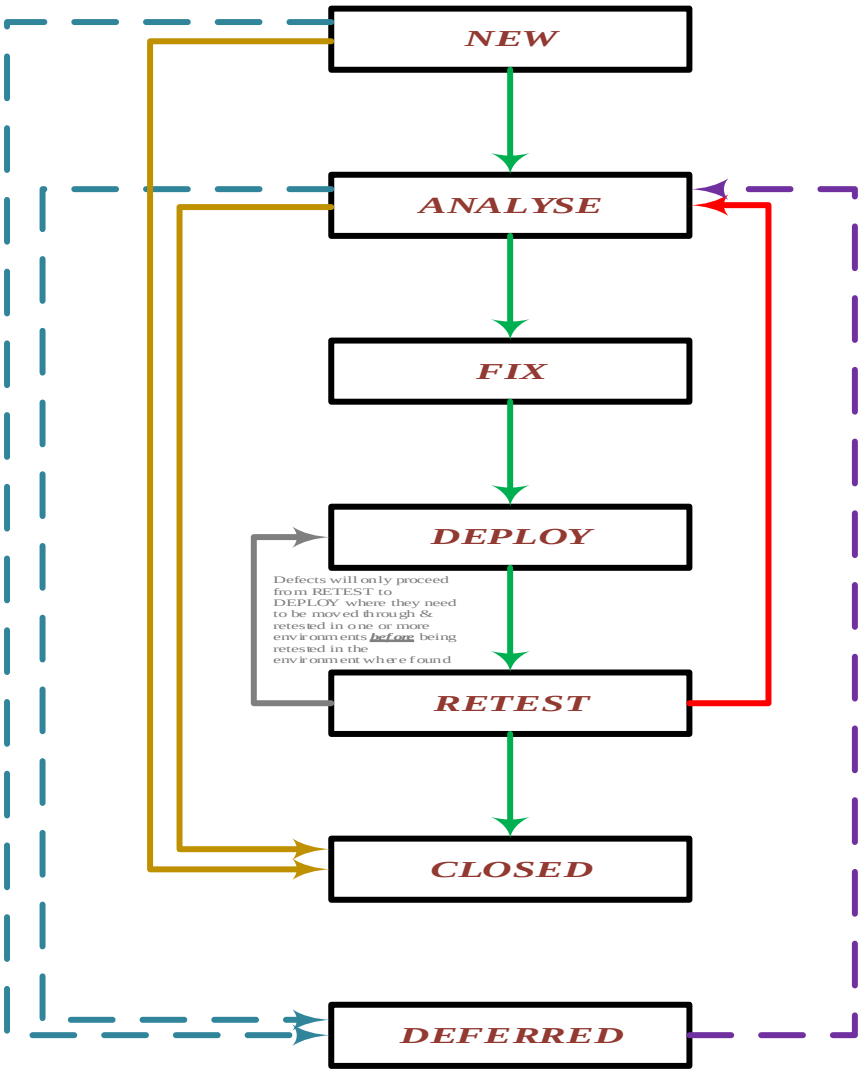
- Each software version delivering fixes into a test environment should be appropriately detailed in Release Notes
- Once the fix has been applied to the test environment(s) it should be retested by an appropriate resource (ideally the individual who raised the defect) to determine whether the defect has been resolved
- If retesting determines the fix has been successful, HP ALM should be updated by the tester to indicate the defect has been resolved. Relevant artefacts such as screen shots should be added to HP ALM and the defect should be closed
- If retesting determines the fix has not been successful, HP ALM should be updated by the tester to indicate the exact nature of the failure. Relevant artefacts such as screen shots should be added to HP ALM and the defect should be assigned back to the appropriate resolver group

This process is reflected in the following defect status definitions and Defect Process Workflow diagram.

Defect Status	Description	Actions to be undertaken
New	When a defect is raised it will automatically be assigned the status of NEW. This status indicates the defect has been logged and is undergoing business/testing evaluation/triage to determine whether it is a valid defect or not.	If the defect is found to be valid, the defect's status will be changed to ANALYSE and it will be re-assigned for a technical evaluation to determine the root cause of the problem. If the defect is found to be invalid, the defect's status will be changed to CLOSED and its sub-status will be set to identify the broad reason why it was classified as invalid. If the defect is an existing Production Problem, its status should be changed to FOUND (see companion document). In all cases, the defect record in QC must be updated to describe why the decision was made.
Analyse	Having determined the defect is valid from a business/testing perspective, the defect needs to be investigated to determine the underlying cause.	There are five possible outcomes from this technical review: 1. The defect is determined to be valid and will be fixed as part of the project's next implementation so its status should be changed to FIX and the defect will be re-assigned 2. The defect is determined to be valid but it will not be fixed as part of the next implementation. Status should be changed to DEFERRED and the defect's Cycle is reset to the implementation in which the defect will be addressed 3. The defect is determined to be valid but it will not be fixed, e.g. cost/effort of correcting the problem outweighs effort of implementing a workaround. Defect's status should be changed to CLOSED and sub-status ACCEPTED 4. The defect is invalid. Status should be changed to CLOSED, sub-status identifies reason why it was classified as invalid (DUPLICATE or REJECTED) 5. Defect is identified as a known Production Defect, status is changed to FOUND (see companion document)

Defect Status	Description	Actions to be undertaken
Fix	Having decided the defect will be corrected as part of the current project, a 'correction' will be produced and unit tested.	If those unit tests are successful, the defect's status will be changed to DEPLOY and it will be re-assigned. If the unit tests are not successful, the FIXER will make a further attempt to correct the problem and repeat those unit tests. This process will be rerun until such time as the unit tests are successful.
Deploy	This status indicates that the 'fix' for a defect is ready to be implemented into the test environment where the defect was found.	The timing of the fix's deployment must always be co-ordinated between the DEPLOYER and the TEST MANAGER so that the validity of the testing is not undermined. Once the 'fix' has been delivered into the nominated environment, the defect's status is changed to RETEST and it is re-assigned.
Retest	This status indicates that the defect's 'fix' has been deployed and can be retested under the original conditions (and in the same environment) where it was first encountered.	If the tests performed were ***not*** in the environment where the defect was originally found, its status should be changed to DEPLOY and its Sub-Status set so that it identifies the next environment on its way back to the location where it was found. If the retest is conducted in the environment where it was initially encountered, change the defect's status to CLOSED with a sub-status of SUCCESSFUL. Regardless of which test environment the retest occurs in, if it fails, change the defect's status to ANALYSE and its sub-state to RETEST FAILED.
Closed	This is the final state for every Pre-Production Defect.	As with every other status listed above, when changing a defect's status it is important that the appropriate comments are added to ensure that we have a complete audit trail of what has happened to the defect, why it happened and as much contextual information as possible has been included. See the next sub-section of this document for a full list of the sub-states used with this status.
Deferred	This status indicates the Business has formally agreed to have the defect fixed as part of a specified, later Release.	When testing for the implementation to which the defect was defers begins, the defect's status is changed to ANALYSE and its sub-status to PREVIOUSLY DEFERRED

The Defect Process Workflow diagram below reflects the path most program defects are expected to follow.



9.9 Defect Reporting Standards

All defects identified during testing will be analysed to determine a root cause of the problem. To support the required analysis, as a minimum the following information should be captured in each defect raised:

- Business requirement, Use Case and/or Test Case being executed when the defect was identified
- Detailed description of the problem
- Steps to recreate the problem
- Expected results – Outcome the tester expected to observe
- Actual results – Outcome observed including how it differed from the expected outcome
- Severity
- The software release (build) it occurred in
- Data, login, screenshots to be stored in defect.

Where possible, each tester should track the defects they have raised through to resolution.

9.10 Resolving Defects:

The cause of a defect can differ from the symptom(s) observed by a tester, so it is important the resolver updates the defect detailing the fix applied. The minimum information required in relation to the resolution of a defect may include:

- Cause of the defect
- Fix applied to resolve the defect
- Software version in which the fix will be delivered to the tester for verification
- Testing undertaken by the resolver to verify the defect has been corrected
- Impacted system(s) and regression implications of the fix applied

9.11 Defect Triage Meetings

The defect resolution process often requires many groups work closely including test team(s), project resources, Project Manager(s), vendor resources and internal Sydney Trains development teams. During test execution regular defect triage meetings will be held to:

- Review the severity and priority assigned to defects
- Determine the most appropriate resolver group
- Determine the target content and delivery dates for deployments to test environment(s)

9.12 Pass & Fail Criteria and Test Case Status

Test Case Status	Description
Pass	A test case will be deemed to have passed if: • The item tested behaves as expected and as per the requirement(s) it was derived from • The item will not introduce a problem or failure • The item will not introduce an unacceptable risk of a problem or failure
Fail	A test case will be deemed to have failed if: • The item tested does not behave as expected or as per the requirement(s) it was derived from • The item will introduce a problem or failure • The item will introduce an unacceptable risk of a problem or failure
Conditional Pass	A Conditional Pass is assigned to a test case which passes the intent of the test, where a low severity, non-critical defect has been observed and raised in HP ALM.
Not Run	Test case execution has not commenced.
Not Completed	Test case execution has commenced, is in progress and has not progressed to the point where a status of pass, fail or conditional pass can be assigned.

Not Applicable (N/A)	A status of N/A is assigned to a test case which has been agreed to no longer be applicable. Assigning the N/A status rather than deleting the test case ensures test case numbers in the TSR align to the number of test cases at the commencement of the test phase.
Blocked	A test case may be assigned the status of Blocked for a number of reasons including but not limited to: • A defect which needs to be resolved is preventing execution of the test case • Functionality not yet delivered • Required test data not available

9.13 Defect Severity Definitions

The severity level assigned to a defect is a reflection of how serious the defect is. It can be a measure of the impact on testing and the ability to continue with the test phase or of the impact the defect would have in the Production environment. The following definitions provide the severity levels which should be assigned to defects raised during testing within the ROC Program.

Severity	Severity Description
Severity 1	Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists. Examples of severity 1 defects include: • Safety Issues • The system or a core component of the system is inoperable Sydney Trains would not consider taking Severity 1 defects into the next test phase or to the Production environment.
Severity 2	High Impact – Assigned to major errors. Some key functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality but the defect must be resolved before the component can be migrated to the next test phase or to production. Examples of severity 2 defects include: • The system or component is operable however one or more functions are not right or have not been delivered and no acceptable workarounds exist • Any issue with data accuracy or integrity which may cause confusion among the Sydney Trains end-user community Sydney Trains would not usually consider taking Severity 2 defects into the next test phase or to the Production environment unless there were exceptional circumstances. Stakeholders would need to have understood and accepted the risk/impact via approval of the Test Summary Report (TSR). There is an expectation any Severity 2 defects would be resolved by the next Release of the application.

Severity	Severity Description
Severity 3	Medium Impact – Assigned to minor errors. Some functionality does not conform to the specification or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact on Sydney Trains end users. Testing can continue and the component can be migrated to the next test phase or to production providing exit criteria are met. Examples of severity 3 defects include: • The system or component is operable however one or more functions are not right or have not been delivered and acceptable workarounds exist Sydney Trains may consider taking a small number of Severity 3 defects into the next test phase or the Production environment provided the cumulative impact of these defects and associated work arounds are acceptable to stakeholders and do not damage the reputation of Sydney Trains, the Program or our partners. Stakeholders would need to have understood and accepted the risk/impact via approval of the Test Summary Report (TSR).
Severity 4	Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on Sydney Trains end users or the application. Examples of severity 4 defects include: • Misspelled (but not misleading) text • Inconsistent fonts • Poor grammar Sydney Trains may consider taking a small number of Severity 4 defects into the next test phase or the Production environment providing the cumulative impact of these defects and associated work arounds are acceptable to stakeholders and do not damage the reputation of Sydney Trains, the Program or our partners. Stakeholders would need to have understood and accepted the risk/Impact via approval of the Test Summary Report (TSR).

9.14 Defect Priority Definitions

Each defect is also assigned a priority level which indicates to development team(s) the order in which defects of the same severity should be addressed. Priorities which can be assigned to defects within the ROC Program are:

- 1 – High
- 2 – Medium
- 3 – Low

Assuming open defects of every severity and priority combination, the order in which defects should be addressed is outlined in the table below:

Order	Severity	Priority
1	Severity – 1	Priority – High
2	Severity – 1	Priority – Medium
3	Severity – 1	Priority – Low
4	Severity – 2	Priority – High
5	Severity – 2	Priority – Medium
6	Severity – 2	Priority – Low
7	Severity – 3	Priority – High
8	Severity – 3	Priority – Medium
9	Severity – 3	Priority – Low
10	Severity – 4	Priority – High
11	Severity – 4	Priority – Medium
12	Severity – 4	Priority – Low

9.15 Defect Rectification SLA's

Service Levels define the target time to fix defects and take into account:

- The urgency of the situation
- The need to strike a balance between speed, quality, sensible packaging and delivery of fixes

For the ROC Program it is envisaged SLA's will be agreed around delivery of configuration fixes and fixes to the underlying COTS products would be delivered via vendor product roadmap(s) and internal processes.

Note – The SLA information below has been taken from Sydney Trains Enterprise Release Planning (ERP) documentation and intended to be used as a guide. ROC Program SLA's will need to be agreed.

Defect Severity	Response Time	Resolution Time	Validation Time	Total SLA
Severity 1	0 - 2 Hours	4 Hours	4 – 8 Hours	Less than 1 Day
Severity 2	0 – 4 Hours	1 Day	1 Day	1 Day
Severity 3	0 - 2 Days	3 Days	4 Days	4 Days
Severity 4	0 – 5 Days	5 days	5 Days	5 Days

In the context of the defect statuses:

- Response Time is the time taken in the New Status (including Triage)
- Resolution Time is the time taken in the Analyse and Fix Statuses
- Validation Time is the time taken in the Deploy, Retest and Closed statuses
- Durations are expressed in business hours and business days
- Service levels are dependent upon availability of sufficient information to analyse and resolve the defect

9.16 Change Management

Under the SAPF, and more specifically the RMP and the CMP, once a specification has been reviewed and formally agreed upon it will be baselined. A baselined artefact can only be changed through formal change control procedures. On the ROC Program baselines are maintained as part of the Configuration Management Process under the CMP.

ROC Program requirements specification will be baselined and fall under the Configuration Management Process. As such any new requirements or variations to existing requirements identified during testing will be raised as a Program Change Request (PCR) and follow the Configuration Management Process.

Each PCR will need to be impact assessed based on a number of criteria including but not limited to:

- Cost
- Impact on Schedule
- Impact on test effort

9.17 ROC Technology Environments

The ROC Program will deliver four new technology systems into a complex landscape of existing applications. Technology environment requirements and specifications will be detailed in the Technology Environment Management Strategy (TEMS) and the Technical Infrastructure Design (TID), which are deliverables of the Detailed Design and Build Phases.

It is envisaged non-Production technology environments (including integration with existing applications where necessary) will be required to accommodate delivery of the following activities in line with Program time frames:

- System Development & Unit Testing
- System Testing
- System Acceptance Testing
- System Integration Testing
- Load & Performance Testing
- User Acceptance Testing
- Cross-Stream Testing
- User Training
- System Demonstrations

It is also expected instances of the new ROC technology systems will need to be delivered to complete the Sydney Trains Production Environment including DR capability.

9.18 ROC Technology Environment Management

In keeping with the ROC Statement of Requirements which was published as part of the technology RfP, Sydney Trains is looking for the System Integrator to be a single point of accountability with 'overall responsibility for the specification, design and build of ROC systems, through to bringing the system into production and change of control to the target support model'.

Technology environment management will be critical to achieving this. The details around technology tests environment management will be delivered in the Technology Test Environment Management Strategy (TEMS), which is a deliverable of the Detailed Design phase and as a minimum is expected to include the following information:

Activity	Description
Environment Availability	Aside from agreed maintenance windows, test environments are expected to be available 24/7 during test planning, preparation and execution periods. Sydney Trains should be both informed and approve any planned outages during these times. Unplanned outages will be managed through environment support.
Environment Support	Details will need to be agreed within the TEMS, however during test planning, preparation and execution periods the following types of environment support arrangements are likely to be required: • Standard Support Mon to Fri – 8.00am to 6.00pm • Extended Support Mon to Fri – 6.00am to 10.00pm (with 48 hours' notice) • Weekend Support Sat & Sun – 8.00am to 6.00pm (with 48 hours' notice)
Configuration Management	The Configuration Management Strategy the program will adopt to assure sound practice around code version control, code branching and merging.
Release Management, Release Notes, Deployments & Outages	In order to strike the right balance between speed, quality, sensible packaging and the delivery of fixes to testing, agreed deployment windows will need to be agreed. Test productivity can also be impacted if deployment outages occur too frequently. Outside the agreed deployment times there should be a provision whereby the Phase Test Manager can agree to ad hoc deployments if required. Each deployment to a test environment should be accompanied by sufficiently detailed Release Notes to inform the test team which fixes have been delivered and enable the status of those items to be updated in the test management tool.
Back Up & Restore	The back-up and restore requirements for test environments.
User Access & Administration	The provision of user access to test environments including ensuring access to the required role profiles and privileges.

Many test phases will have a dependency on integration with existing application environments. These dependencies should be detailed within the TEMS to ensure ROC test environment requirements are met.

9.19 Testing Escalation Path

Escalation is a critical process used by Program team members to resolve issues. Clear communication is the key to any escalation process and the objective of escalation is to create a path for resolution of issues.

For ROC testing activities the Escalation path will be as follows:

Tester => Test Lead => Test Manager => Program Test Manager => Program Management

Some the key principles of the escalation process have been outlined below:

- All program team members and participants are empowered to escalate
- Escalation needs to be managed
- Escalation must be documented
- Escalation needs to be timely
- Escalation is a risk and issue mitigation process

9.20 Training

Sydney Trains business users (also known as Subject Matter Experts or SME's) who will participate in Technology UAT and Cross-Stream Testing will need to be trained in the new ROC technology systems, processes and procedures prior to the commencement of R1 Technology UAT.

Training SME's to participate in these activities and the subsequent training of all end users is within the scope of the ROC T&C stream.

10 Appendix B – Technology Test Phases

The ROC Program has engaged product vendors and a System Integrator who will deliver the majority of Technology In-Stream testing on behalf of the Program. This document does not set out be prescriptive about how these vendors deliver testing. Vendors should document their recommended test strategy and approach via deliver of the Technology Test Strategy and other test planning documentation for Sydney Trains review and approval. The ROC Program will also provide a layer of Test Governance across vendor technology testing.

In January 2015 an agreed interim version of this document (v1.0) was shared with technology vendor(s) participating in the High Level Design Phase of the Program. It provided an early view of the Program Test Management Framework, including early Program thinking around technology test phases, roles and responsibilities to assist vendors in preparing a BAFO. The detail relating to these test phases and how they might be delivered are reflected in this appendix.

10.1 Shakedown Testing

Following a deployment to any test environment a Shakedown Test will be performed. The Shakedown Test is generally a selected sub-set of test cases executed to verify the deployment has been successful and all required components of the test environment are present with required connectivity and interfaces in place. A successful Shakedown Test indicates both the deployment and the environments are ready for the commencement of a test phase.

10.2 Unit Testing (UT)

Test Phase Definition:	Unit testing focuses on the key activities which must be verified at the component level to demonstrate modules operate as designed. Unit Testing is executed to ensure valid operation of components prior to System Testing and may include verification of: • Mandatory Fields • Event Handling • Boundary Testing of Upper & Lower Limits • Character Acceptance • Error and exception handling
Test Phase Owner:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Resources:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Deliverables:	There will not be any formal deliverables produced as artefacts of Unit Testing. System Testing will follow, be delivered by the same test phase owners as Unit Testing and be governed by the ROC Program.
Test Location:	Vendor site(s)
Test Environment:	ROC Dev environment(s). Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.

Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Application teams and vendors may elect to either use in-hose test management tools or Sydney Trains test management tool (HP ALM) for Unit Testing.
Test Artefacts:	There are no formal test artefacts produced during Unit Testing which will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.3 System Testing (ST)

Test Phase Definition:	New ROC systems and changes to existing applications tested without integration. System Testing may include: • Design Validation – Ensures an individual system as a discreet module will correctly process, pass and store data as specified. Test stubs, harnesses or simulators should be used during System Testing to ensure boundaries of the solution are validated in preparation for integration testing • Usability Testing – Ensures the system complies with application standards and presentation policies. This may include consistency of hotkeys, uniform navigation and listing standards. Usability Testing ensures the new application or change to an existing application will 'fit' into the existing application landscape • Data Conversion – Verification of data loads, data migrations, data conversions and data handling. Includes ensuring any data to be loaded is accurately defined • Service validation including adoption of standards e.g.: SIRI and simulated service testing using SOAP UI and stubs • Testing of Non-functional requirements
Test Phase Owner:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Resources:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Governance:	• SP4 – Systems Integrator • ROC Technology Stream

Deliverables:	Deliverables to be provided for each product and change being system tested: • Detailed Test Plan (DTP) for System Testing • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for System Testing
Test Location:	Vendor site(s)
Test Environment:	ROC Dev environment(s). Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Application teams and vendors may elect to either use in-hose test management tools or Sydney Trains test management tool (HP ALM) for System Testing.
Test Artefacts:	System test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.4 System Acceptance Testing (SAT)

Test Phase Definition:	SAT verifies each application which has exited System Testing can be correctly installed, configured and provisioned into an integrated ROC Test Environment. Each Product Vendor will then execute an agreed subset of tests to prove the applications and environment are ready for the commencement of SIT.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	Test Execution: • SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications Witnessing Testing: • SP4 – System Integrator

Test Governance:	• SP4 – System Integrator
Deliverables:	Deliverables to be provided for each product and change being system tested: • Detailed Test Plan (DTP) for System Testing • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for System Testing
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC SAT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	SAT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.5 System Integration Testing (SIT)

Test Phase Definition:	SIT verifies systems which have been proven to function correctly in System Testing work together when integrated. System Integration Testing should commence with point to point service integration testing for example REM to TIBCO, TIBCO to REM, changed existing application to TIBCO, TIBCO to changed existing application. Transaction flows across all components and systems which make up the ROC Technology solution will then be verified to ensure data flows through each component of the solution as expected without conflicts, corruption, duplication or loss. SIT should also include: • Non-functional testing such as failure and recovery • Sociability Testing which ensures all new and existing applications can co-exist on a user's desktop without conflict.

Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for SIT • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for SIT
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC SIT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	SIT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.6 Load & Performance Testing (L&P)

Test Phase Definition:	Load & Performance Testing evaluates the compliance of a system or software components against specified non-functional requirements such as response times, transaction processing time and resource utilisation. Load and Performance Testing may include the following types of tests: • Performance • Soak • Volume • Scalability • Stress • As we as providing results which can be used as an input to Capacity Planning It is expected L&P Testing will first be executed within the SIT time frames and be re-run over numerous iterations throughout the program lifecycle.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for L&P • L&P Scripts • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for L&P
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	The environment used for L&P Testing should be as 'production like' as possible. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) Document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.

Test Tools:	Load Runner and HP ALM
Test Artefacts:	L&P test scripts, results and defects stored in Load Runner and HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.7 Security & Penetration Testing

Test Phase Definition:	Security Testing checks whether the application(s) or service(s) are secure including requirements covering confidentiality, integrity, authentication, availability, authorisation and non-repudiation by answering the following questions: • How vulnerable is the system to attacks; can anyone hack the system or login to the application without authorisation? • How well is the data protected while the system maintains functionality? • Is there any information leakage via encryption, firewalls, wide range use of software and hardware? For the ROC Program, Security requirements as stated in the Detailed business requirements will be tested during System and System Integration Testing as practicable. As such, these activities will be covered by the Technology Test Strategy document and subsequent technology test planning documentation. The rest of this section relates specifically to Penetration Testing, which is a specific subset of Security Testing. Penetration Testing involves playing the role of an attacker in order to determine the vulnerability of an organisation's IT landscape against unauthorised attack, malicious user(s) or malware. The ROC Program plans to engage a third party to undertake Penetration Testing. The scope of Penetration Testing required by the ROC Program is to be determined during the build phase and documented in the Security and Penetration Detailed Test Plan. It is envisaged Penetration Testing may be re-run over numerous iterations throughout the life of the ROC Program.
Test Phase Owner:	• ROC Technology Stream
Test Resources:	• External Consultancy
Test Governance:	• ROC Technology Stream and Sydney Trains Security Architect(s)
Deliverables:	• Detailed Test Plan (DTP) for Security & Penetration Testing • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for Security & Penetration Testing Note – Due to the nature of Security & Penetration Testing, distribution of artefacts may be restricted.

Test Location:	TBC. Potentially External Consultancy offices.
Test Environment:	TBC via consultation with Sydney Trains Security Architect(s) and documented in the Security and Penetration Detailed Test Plan.
Test Data:	Test data for Penetration Testing will be the responsibility of the external consultancy and will be socialised and accepted (as required) via the reviews and approval of Security & Penetration Testing Planning artefacts.
Test Tool:	Access to defects identified during Penetration Testing by the external consultancy is likely to be restricted. As such they may be recorded in a separate instance of HP ALM or in an appropriate securely stored format. Additional tools to be supplied by external consultancy as required.
Test Artefacts:	Security & Penetration scenarios, results and defects will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.8 Automated Regression Testing

Test Phase Definition:	A selection of ROC scenarios will be selected and form the basis of the ROC Automation Regression Suite. These scripts will need to be maintained throughout the program lifecycle as ROC systems and existing applications are developed and changed. It is expected Automated Regression Testing will first be executed within the SIT time frames and be re-run over numerous iterations throughout the program lifecycle.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for Automated Regression • Automated Regression Scripts • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for Automated Regression
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	Automated Regression scripts may be run in a number of environments over the course of the ROC Program. Details to be confirmed in the ROC Technology Test Strategy and ROC Technology Environment Management Strategy (TEMS) documents.

Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Quick Test Professional (QTP) and HP ALM
Test Artefacts:	Automated Regression test scripts, results and defects stored in QTP and HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.9 User Acceptance Testing (UAT)

Test Phase Definition:	UAT verifies Business requirements have been met in the technology systems delivered. The objective of UAT is to test the overall business functionality of technology systems from an end user perspective in the context of Business processes and roles to assure the overall solution is fit for use in a business context. By proving systems will perform as expected, UAT allows sponsors, stakeholders and end users to provide their acceptance of the technology systems delivered. A ROC test principle is that program testing should occur prior to business testing. Program test resources will execute UAT scenarios in order to identify and resolve defects prior to Business UAT. Benefits of this approach include: • Use of professional test resources to save Business resources from 'testing fatigue' • Build program confidence prior to business exposure Business resources will then execute (a potentially cut down set of) UAT test cases. Benefits of this approach include: • Duration, iterations and defects greatly reduced by program UAT • Business resources initial experience with systems is a positive one • Positive word of mouth from business testers back to their teams The success of this approach can be measured by analysis of the defects identified during Business UAT. If earlier test phases are permitted to achieve their agreed exit criteria and defects which could have been identified and resolved in those test phases are found during Business UAT, we would conclude earlier test phases could have been more effective. If this is the case, further analysis should be conducted to determine how these test phases can be improved for future Releases. If Business UAT identifies and resolves the types of defects only SME's from the Business were likely to pick up, we can conclude Business UAT has served its purpose and earlier test phases have been effective.

Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• Program UAT – ROC Program and SP4 resources • Business UAT – Sydney Trains business users (ROC SME's), supported by ROC Program, Product Vendor and System Integrator resources
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for UAT • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for UAT
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC UAT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) Document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	UAT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

11 Related Documents

The following documents have been referenced in preparing this Program Test Management Framework.

Document Title	Version Number
ROC Roadmap	V2.1
ROC Program Systems Assurance & Planning Framework SoW	V11.1
Rail Operations Centre Concept of Operations	V4.0
PMLC ROC Project Management Plan	V2.2
ROC Final Business Case	V5.0
Program Quality Management Plan	V2.0
Infrastructure Assurance Plan	V1.0
ROC Solution Scope	V1.1
Rail Operations Centre (ROC): Timeline to 2018	(Final)

Appendix I – Environment Specifications

As set out in Module 3.

Appendix J – Governance Schedule

ROC-TEC-PL-0001 -
ROC Technology Ver

Communication Plan

Rail Operations Centre (ROC) Vendor Communication Plan
Rail Operations Centre Program

ROC Release 2 Detailed Design	
Project or Program	"Program"

Communication Plan

Document Ownership Information

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Capital Register ID	3141.02	
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Version	**Date**	**Author**	**Reason for Issue / Changes Included**
1.0	27/11/2015	Kelly McDonald (Change Specialist)	First Draft for Sydney Trains review
1.1	12/02/2016	Kelly McDonald (Change Specialist)	Further update following internal review
1.2	12/02/2016	Kelly McDonald (Change Specialist)	Second Draft for Thales review. Updates include Thales feedback; Roles and Governance section changes; minor corrections
1.3	29/02/2016	Kelly McDonald (Change Lead)	Migrated document to new template format; Issue and Escalation Process section minimised
1.4	04/04/2016	Kelly McDonald (Change Lead)	Governance section updated
1.5	13/05/2016	Kelly McDonald (Change Lead)	Final update following joint review of this and the Governance Structure document with Sydney Trains
1.5.1	17/05/2016	Kelly McDonald (Change Lead)	Definition table added; minor Role updates
1.5.2	23/05/2016	Kelly McDonald (Change Lead)	Minor corrections/updates (pp1, 6-11; 23-25; 27-29; Document Properties; Header/Footer)

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Contents

List of Diagrams

Reference Documents

The following documents were referenced as part of the development of this document:

Document Name	Version	Date
ROC Release 1 REM Detail Design Project Communication Plan	v1.0	12/11/2015
ROC Release 1 REM Detail Design Project Communication Plan	v3.0	19/01/2016
ROC Release 1 REM Detail Design Project Communication Plan	v4.0	05/02/2016
ROC Meeting Etiquette Poster	N/A	12/11/2015
ROC Program Governance Schedule (contract schedule)	N/A	11/05/2016

1 Document Purpose

The ROC Technology Vendor Communication Plan clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development.

The ROC Technology Vendor Communication Plan outlines:

- What needs to be communicated and to whom;
- How often these exchanges should happen; and
- In what format and why they are necessary.

2 Definitions

Term	Definition
Customer	"Customer" means Sydney Trains
DRICA / DRICASB	Dependencies | Risks | Issues | Changes | Actions / Dependencies | Risks | Issues | Changes | Actions | Scope-Benefits
Individual Contractor / Contractors	Refer to "Other Contractor"
System Integrator (SI) Contractor or Contractor	"System Integrator (SI) Contractor" or "Contractor" means Ajilon Australia Pty Ltd
Other Contractor	"Other Contractor" means the IMS, CIMS or DTTS contractor
SME	"SME" means Subject Matter Expert

3 Project Reporting

3.1 Project Highlight Reports

A Project Highlight Report will be published weekly by the SI Project Manager to the Sydney Trains ROC Program (refer to Matrix for full list of recipients). The report will contain:

- Achievements for the period;
- Plan for the next period;
- Status of any Change Requests;
- Milestones and deliverable progress; and
- Risks, Actions, Issues and Decisions (DRICA)

4 General

4.1 Introduction

The ROC Technology Vendor Communication Plan document describes the relationship between the Customer and the Contractors (Vertical), as well as the SI Contractor and Other Contractors (Horizontal) to enable effective, efficient, and high-quality delivery of Services to the Customer and to each other, to enable the Customer to achieve the business objectives of the ROC Technology Solution.

This document sets out the communication structure for overall management of the relationship, the roles and responsibilities of the parties to maintain a working relationship, and the type, content and frequency of the meetings that will be held.

The purpose of the ROC Technology Vendor Communication Plan is to ensure that guiding principles, objectives, structures, operating guidelines, methods and measures for implementing effective communication are clearly defined and consistently implemented.

4.2 Guiding Principles

The ROC Technology Vendor Communication Plan is designed to achieve the following guiding principles:

a. Promoting a collaborative relationship

b. Continually validating consistency of the results and benefits derived from the ROC Technology Vendor Communication Plan with the Customer's and the Contractor's expectations and objectives

c. Establishing a structure to streamline day-to-day management and administration of the relationship

d. Ensuring that an effective relationship management process exists for communication, decision making, joint issue resolution, the Customer satisfaction, contract change and continuous improvement

e. Ensuring overall monitoring of contractor performance

f. Ensuring that potential issues in due course are investigated, resolved and – if necessary – escalated

g. Establishing effective means for managing the delivery of quality

h. Monitoring established Customer objectives.

5 ROC Technology Vendor meetings

The following ROC Technology Vendor meetings are established for the ROC Program.

5.1 Executive Meeting

The Executive meeting is the forum from which executives from Sydney Trains and the System Integrator discuss the progress of the project and potential future opportunities.

The Executive meeting is conducted annually involving: from Sydney Trains, the CIO, General Manager of the relative Business and the ROC Program Director. From the Contractors perspective, attendees should be: CEO, CIO, and Senior Account Manager or appropriate “C” level Representative.

The following administrative matters relate to the Executive Meeting:

a. Attendees:
   i. From the Customer: Chief Information Officer (Chairman), the General Manager (of the relative Business), the ROC Program Director (who supports the CIO).
   ii. From the Contractor: Chief Executive Officer (Vice Chairman), the Chief Information Officer, Senior Account Manager or “C” level representative.

b. The Customer’s Chief Information Officer shall be supported by the ROC Program Director; The Contractor’s General Manager shall be supported by the Managing Director.

c. Agenda: The following items should be, as a minimum, on the agenda for each meeting:
   i. Resolution of risks and issues related to the overall relations between the Customer and the Contractor
   ii. Overall performance against business goals
   iii. Where applicable, revision of goals and long term plans for development of the relationship
   iv. Identify and discuss joint strategic business direction and opportunities
   v. As the highest level on the escalation path. Act as the ultimate point of joint dispute resolution.

d. Material: The following support document should be made available to the attendees of the Executive Meeting:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. ROC Vendor Executive Pack documenting contract performance
   iv. Recommendations as escalated from the ROC Vendor Steering Committee
   v. Critical Risk and Issues derived from the Risk and Issues Register
   vi. Decision log.

e. Meeting minutes: Minutes shall be taken by the Contractor and socialised with the Customer’s attendees within 48 hours of the end of the meeting.

f. Frequency: Executive Meetings shall be held annually commencing on the first anniversary of execution of the Detailed Design agreement.

5.2 ROC Vendor Steering Committee

The ROC Vendor Steering Committee is the primary focal point for executive and strategic decisions, as well as the escalation point for resolution. The ROC Vendor Steering Committee shall meet monthly or more frequently if required, to promote a relationship based on trust and mutual understanding and assess and set overall strategy for the relationship.

The ROC Vendor Steering Committee comprises Executives from the Contractor as well as Executives associated with the ROC Program.

The following administrative matters relate to the ROC Vendor Steering Committee meeting:

a. Attendees:

   i. From the Customer: The Chief Information Officer (Sydney Trains), the General Manager of Strategic Procurement and the ROC Program Director. The following attendees report in to this meeting: Commercial Manager, ROC Program Stream Manager.

   ii. From the Contractor: The General Manager responsible for the account or appropriate “C” level Representative. The following attendees report in to this meeting: Project Director.

b. Agenda: The Meeting Agenda of the ROC Vendor Steering Committee includes:

   i. Project update

   ii. Strategic direction of the ROC Program

   iii. Status of the relationship between the Parties

   iv. Project budget / incentive opportunities

   v. Future opportunities associated with the ROC Program and Sydney Trains in general

   vi. Escalated risk raised by the Management Committee

c. Material: The following support document should be made available to the attendees of the ROC Vendor Steering Committee:

   i. Meeting Agenda

   ii. Minutes of previous meetings

   iii. Joint DRICA (“A” and “B” risks only)

d. Meeting Minutes: Minutes shall be taken by the Contractor and socialised with attendees within 48 hours of the end of the meeting

e. Frequency: ROC Vendor Steering Committee Meetings shall be held monthly.

5.3 Multi-Vendor Management Committee

The Multi-Vendor Management Committee deals with governance between all Parties to the ROC Program and as a consequence, expressly excludes discussions relating to commercial matters of any party: e.g. Contractors financial affairs, product strategic direction, IP etc.

The Multi-Vendor Management Meeting is the forum to review, discuss and provide recommendations on technology, performance and relationship improvements for continual service improvement (CSI).

The Multi-Vendor Management Meeting should be held quarterly unless ad hoc meetings are required.

In order to resolve issues or disputes, attendees at the Multi-Vendor Management Meeting should not be those whom attend the Vendor Management Meeting.

The following administrative matters relate to the Sydney Trains & System Integrator:

a. Attendees:
   i. From the Customer: The ROC Program Director, ROC Program Stream Manager and Commercial Manager.
   ii. From the Contractor: The Senior Account Manager and Program Director
b. Agenda: the Multi-Vendor Management Committee Agenda includes:
   i. Project status and update
   ii. Schedule Management
   iii. Relationship Management
   iv. Proposed efficiencies / business improvement
   v. Future scope opportunities associated with the ROC Program
   vi. Escalated risk raised by the Governance Meeting
   vii. General business
c. Material: The following support document should be made available to the attendees of the Multi-Vendor Management Committee:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. Joint DRICA ("A" and "B" risk only)
d. Meeting Minutes: Minutes shall be taken by the Contractor and socialised with the Customer's attendees within 48 hours of the end of the meeting
e. Frequency: the Multi-Vendor Management Meeting is to meet quarterly.

5.4 Management Committee (Individual Contractors)

The Management Committee (Individual Contractors) conducts governance on a managerial level and is primarily focused on ensuring vendor performance, relationship management and commercial performance, including change requests, invoices, service credits and incentives.

The Management Committee (Individual Contractors) should be held monthly unless ad hoc meetings are required.

In order to resolve issues or disputes, attendees at the Management Committee (Individual Contractors) should not be those whom attend the Vendor Management Meeting.

The following administrative matters relate to the Management Committee (Individual Contractors):

a. Attendees:
   i. From the Customer: The ROC Technology Program Manager and Commercial Manager. The following attendees report in to this meeting: ROC Release Project Managers.
   ii. From the Contractor: The Senior Account Manager and Program Director. The following attendees report in to this meeting: Contractor Release Project Managers.
b. Agenda: the Management Committee (Individual Contractors) Agenda includes:
   i. Project status and update
   ii. Schedule Management
   iii. Commercial Management
   iv. Relationship Management

v. Proposed efficiencies / business improvement

vi. Future scope opportunities associated with the ROC Program

vii. Escalated risks raised by the Multi-Vendor Management Meeting

viii. General business

c. Material: The following support documents should be made available to the attendees of the Management Committee (Individual Contractors):

i. Meeting Agenda

ii. Minutes of previous meetings

iii. Project Status Update Pack

iv. Joint DRICA ("A" and "B" risks only).

d. Meeting Minutes: Minutes shall be taken by the ROC PMO representative and socialised with the Customer's attendees within 48 hours of the end of the meeting

e. Frequency: the Management Committee (Individual Contractors) is to meet monthly

5.5 Vendor Management Meeting

The Vendor Management Meeting focuses on the overall service delivery of the Contractor and Other Contractors. Meetings should be held weekly to ensure the Project remains focussed on the critical path, and address matters such as delinquency of performance or differing interpretations of the Contractors obligations, progression of the relative ROC Release, service delivery, quality, issue clarification and resolution etc. Where these cannot be resolved to the mutual satisfaction of the Parties, the issue should be escalated to the Management Committee.

Vendor Management Meetings should be conducted by the Project Managers. Items to be discussed include: progression of the relative stream, service delivery, quality, issue clarification and resolution etc.

No commercial matters are discussed at this level due to the involvement of a number of different vendors.

The Vendor Management Meeting is the first level of management oversight of the ROC Program and should be conducted in separate Release streams to reflect the unique roles of the Individual Contractors.

The following administrative matters relate to the Vendor Management Meeting:

a. Attendees:

i. From the Customer: the relative ROC Release Project Manager, Technology Architect or nominated delegate

ii. From the Contractor: Release Project Manager, Project Coordinator and nominated technology SME

b. Agenda: The following items should be, as a minimum, on the agenda for each meeting:

i. Performance against the schedule

ii. Proposed scope changes

iii. Deliverable status, including acceptances

iv. Resource planning

v. Customer's CSI compliance

vi. Risks and Issues

vii. Escalation points for Management Committee Meeting

c. Material: The following support documents should be made available to the attendees of the Vendor Management meeting:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. Project Highlight Report
   iv. Risk and Issues derived from the Risk and Issues Register

d. Meeting minutes: Minutes shall be taken by the Contractor and socialised with the attendees within 48 hours of the end of the meeting

e. Frequency: Vendor Management Meetings shall be held weekly.

5.6 Technology and Risk Management Meeting

The Technology and Risk Management Meeting is the forum to discuss and provide recommendations on IT architecture, standards, and all aspects of risk management and IT security

The following administrative matters relate to the Technology and Risk Management Meeting:

a. Attendees:
   i. The Customer: ROC Technology Lead Architect, Technology Program Manager, ROC Release Architect and relative Release SME's as required
   ii. The Contractor and Other Contractors: Program Director, Release Architect and relevant SME's.

b. Agenda: The following items should be, as a minimum, on the agenda for each meeting:
   i. Review and propose technology directions, standards and architecture
   ii. Discuss and approve new and innovative services proposed by the Contractor
   iii. Discuss and review cross-vendor technology issues
   iv. Review impact of introducing applications into the legacy environment
   v. Propose changes to architecture and IT standards for approval by the Customer's architecture team
   vi. Review any proposals for reductions in the costs of the Services driven by new technology
   vii. Explore and understand innovations in technology that could enable business benefit for the Customer
   viii. Proactively propose, describe and plan innovation initiatives and provide innovation project recommendations to the Executive Level
   ix. Align security architecture, policy and operations
   x. Plan, review and monitor joint security initiatives and requirements
   xi. Evaluate risk management issues including both actual risks and contingencies
   xii. Evaluate recommendations in regard to proactive measures and remediation
   xiii. On request from the ROC Vendor Steering Committee investigate opportunities for innovation or other special tasks within that area
   xiv. Resolve any issues promptly and escalate if necessary in accordance with Section (Issue Escalation Process) in this schedule

c. Material:
   i. Product roadmap and plan
   ii. Proposed changes on architecture and application landscape
   iii. Report of innovation in technology
   iv. DRICA
d. Minutes: PMO Coordinator
e. Frequency: The Technology and Risk Management Meeting should be held quarterly unless otherwise agreed between the Parties.

5.7 Operational Meetings

The Operational Meetings are ad hoc meetings held between the relevant Parties to assess technology specific issues: e.g. testing, availability and configuration of environments, security, integration, configuration and customisation issues, etc.

Attendees are the SME's and, depending on the nature of the issue being discussed, may also require the involvement of the Release Project Managers and other key personnel.

No commercial matters are discussed at this level as attendees are not involved in financial / contractual management.

5.8 Project Management Forum

The Project Management Forum Meetings are meetings held fortnightly between the ROC Technology and Contractor Release Project Managers. This meeting is a discussion forum for the project managers on the ROC Technology Program to share understanding and issues and ensure alignment of project management activities across the Program.

a. Attendees:
   i. From the Customer: The ROC Technology Release Project Mangers
   ii. From the Contractor and Other Contractors: Release Project Managers
b. Agenda includes:
   i. Master Schedule overall
   ii. Potential blockers, emerging issues, threats
   iii. Relationship Management
   iv. Lessons learnt, good practice share
   v. Collegiate advice
   vi. Future horizon planning
d. Material: The material is as required to support the subjects being discussed
e. Meeting Minutes: There are no minutes however action items are taken and distributed
f. Frequency: fortnightly.

6 Governance Structure (Technical Governance)

6.1 Contractor (SI) and Other Contractors

6.1.1 The Contractor (SI) is the Customer's agent responsible for delivering the ROC Solution. Technical Governance between the Contractor and Other Contractors, as well as the Contractor and the Customer is as described in the following diagram.

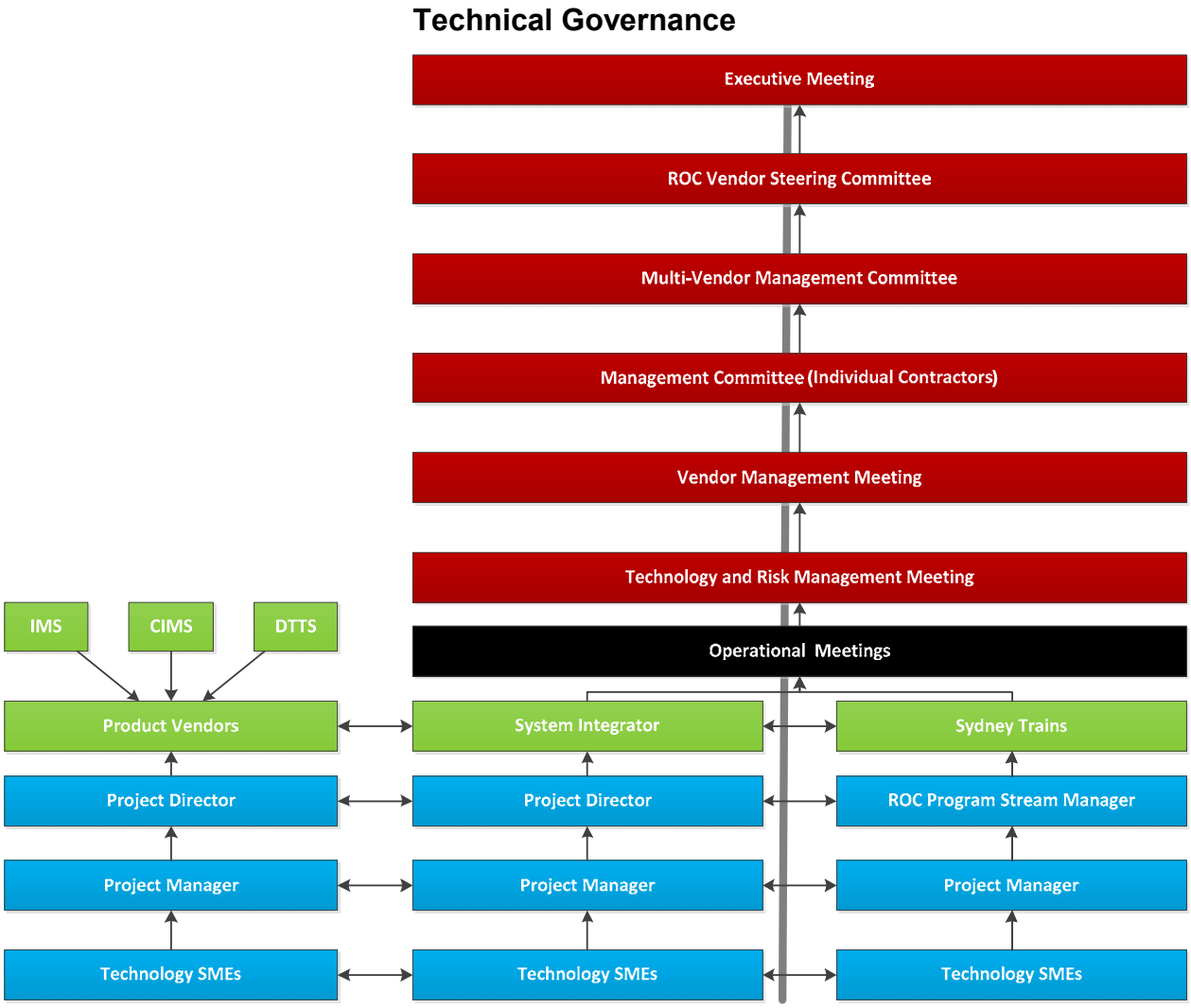


Diagram 1: ROC Technical Governance Diagram

Colour coding for the diagram above:

a. Red cells identify the relevant meetings in order of descending significance

b. Black cell is not subject to the formal governance process but included by reference in this document.

c. Green cells identify the relevant organisation

d. Blue cells identify the relevant role within the organisations.

6.1.2 The vertical cells establish the logical workflow between the Contractor and the Other Contractors, as well as the Contractor and the Customer.

6.1.3 The horizontal cells establish technical counterparts in increasing levels of significance.

6.1.4 The delineation of responsibility is exhibited by the black line between the Customer and Contractor. The purpose is expressly designed to provide a visual representation of the Systems Integrator model engagement.

6.1.5 This is reinforced by the fixed engagement lines between the Contractor and Other Contractors technical counterparts, and the line between the Contractors and the Customers technical counterparts. This serves to demonstrate that the Contractor may directly engage the Customers technical personnel during the program, however the technical relationship for product vendors only extends to the Contractor.

7 Governance Structure (Commercial Governance)

7.1 Commercial Governance

7.1.1 While the Contractor (Systems Integrator) is the Customer's agent responsible for delivering the ROC Solution, commercial matters are expressly excluded from the scope of managing the Other Contractors in order to ensure confidentiality of the Other Contractors' commercial affairs.

7.1.2 Commercial Governance between the Parties is therefore dealt with individually between the Customer, the Contractor and the Other Contractors as illustrated in the following diagram.

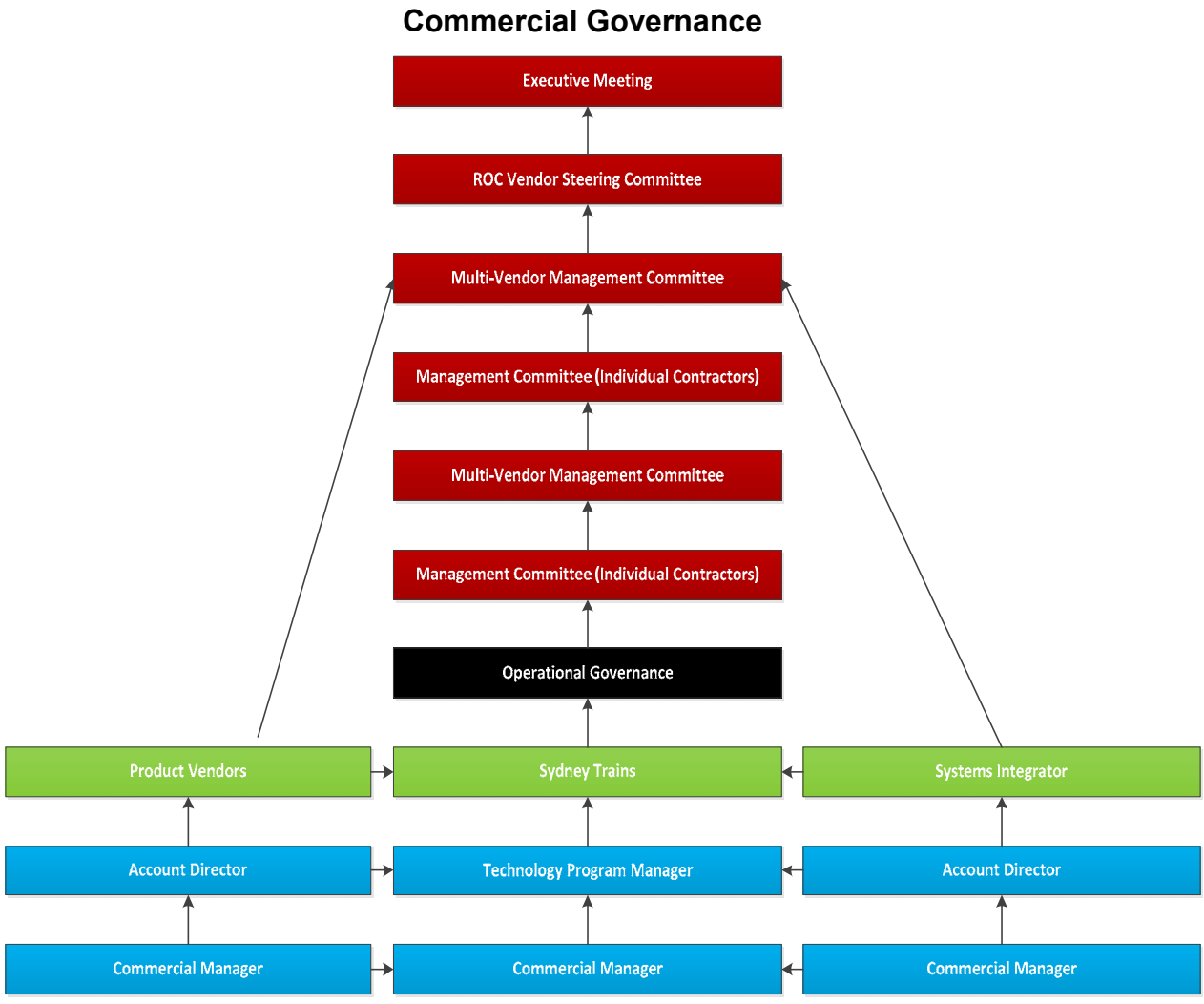


Diagram 2: ROC Commercial Governance Diagram

7.1.3 Colour coding for the diagram above:

a. Red cells identify the relevant meetings in order of descending significance
b. Black cells are not relevant to Commercial Governance
c. Green cells identify the relevant organisation
d. Blue cells identify the relevant role within the organisations.

7.1.4 The vertical cells establish the logical workflow within the relevant organisation. Note the separation of the Contractor and the Other Contractors.

7.1.5 The horizontal cells establish commercial counterparts between the Other Contractor and the Customer and the Contractor and the Customer.

7.1.6 Commercial discussions bypass the operational meeting and vendor management meeting as these involve non-commercial attendees.

7.1.7 Discussions relating to commercial issues should occur at the Management Meeting as:

a. Meetings are between the Customer and individual contractors to ensure confidentiality of their information.

b. The absence of other Contractors promotes an open and frank exchange of views between the parties, including highlighting any issues any Contractor may have with another Contractor.

8 Contractor's Key Roles in the Governance Structure

8.1 Overview

The Contractor shall provide the following key roles in the joint governance structure:

a. Managing Director

b. General Manager

c. Account Executive / Client Relationship Manager

d. Service Delivery Manager / Project Director

e. Account Executive / Client Relationship Manager

f. Commercial Manager

g. Project Manager

h. Lead Solution Architect.

The primary governance-related responsibilities for each key role are specified in sub-section "Key Roles and Responsibilities".

The Contractor shall appoint an individual for each of the roles above and one individual may not fulfil more than three of the roles above.

8.2 Key Roles and Responsibilities

8.2.1 Managing Director

The Contractor's Managing Director is responsible for all facets of the Contractor's performance, including service delivery, relationship management and finances. The Managing Director interfaces with the Customer's CIO.

8.2.2 General Manager

The Contractor's General Manager is responsible for the overall management of the relationship at the strategic and executive level as well as leadership of the service delivery team. The General Manager interfaces with the Customer's Program Director.

8.2.3 Account Executive / Client Relationship Manager

The Contractor's Account Executive will be responsible for the overall engagement with the Customer under this Agreement. The Account Executive will be the single point of accountability for the account and for all of the Services. The Account Executive works with the Customer's Technology Program Manager to align the delivery of Services with the strategic needs of the Customer, with focuses on performance, charges and contractual matters. The primary governance-related responsibilities of the Account Executive are:

a. Management of the executive relationship between the Contractor and the Customer

b. Management of the Contractor's delivery teams

c. Ensuring a successful relationship with the Customer

d. Overseeing that all performance requirements are satisfied as agreed in this Agreement

e. Ensuring proper invoicing and payments between the Contractor and the Customer

f. Overseeing all contractual related matters, e.g. change of service levels, etc.

g. Ensuring that the Contractor fulfils all of its obligations under this Agreement

h. Overseeing and being responsible for the successful completion of transition required to provide Services in this Agreement

i. Participating in the Customer's strategic planning process and developing recommendations and plans that support the Customer's strategic direction

j. Informing the Customer about relevant new corporate capabilities and developments within the Contractor's organisation and proposing ideas and solutions that may contribute to Continuous Improvement

k. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document.

8.2.4 Service Delivery Manager / Project Director

The Contractor's Service Delivery Manager has the overall responsibility of delivering the Services. The Service Delivery Manager works with the Customer's Technology Program Manager to manage and meet commitments, requirements and expectations regarding overall delivery, including scope and demand within the scope of the Services. The primary governance-related responsibilities of the Service Delivery Manager consist of:

a. Providing overall leadership and management of the Service delivery teams

b. Interfacing with and supporting the Customer organisation, which contributes to building a successful relationship between the Customer and the Contractor

c. Responsible for the appropriateness, quality and timeliness of all defined scope of Services and transition, and ensuring overall management of inter-service dependencies and issues

d. Monitoring and measuring of the Services from the Contractor to the Customer

e. Ensuring end-to-end responsibility of Maintenance, Service Request, and Enhancement activities to be delivered and/or maintained by the Contractor.

8.2.5 Account Manager / Client Relationship Manager

The Account Manager has primary responsibility for the administration and management of the Contractor's contractual compliance with the Agreement. The primary governance-related responsibilities of the Account Manager consist of:

a. Establishing and executing all required account and business management processes and associated reporting to meet the Customer's expectations

b. Ensuring that a log is updated and shared with the Customer containing names and contact information of personnel holding roles set forth in the PIPP.

c. Informing the Customer of important changes in the Contractor's resources that may have a material effect on the Services

d. Assisting the Account Executive in the resolution of contract disputes

e. Managing contracts and modifications, resolving all issues affecting the Services compliance

f. Ensuring the Contractor's fulfilment of its obligations under this Agreement;

g. Ensuring satisfaction of legal requirements

h. Advising management of contractual rights and obligations

i. Reviewing and facilitating the Contractor's approval of all contractual documents

j. Working with other relevant the Customer teams to ensure contractual requirements are met, including documentation and management of Service Levels

k. Providing information to the Customer as appropriate to facilitate the Customer understanding of the Contractor's new capabilities relevant to the Services

l. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document.

8.2.6 Commercial Manager

The Contractor's Commercial Manager has the overall accountability of the Contractor's contractual compliance with the Agreement. The primary governance-related responsibilities of the Commercial Manager consist of:

a. Working with the Customer's Commercial Manager to prepare, approve, and execute contract change orders, amendments, and modifications

b. Maintaining and updating issues and open actions log in order to track and facilitate resolution of all contractual issues and actions; performing escalations as required

c. Assisting in the contractual management of all new service offerings and related new Customer requirements so that they are properly reviewed, approved, executed, and integrated into the Agreement in accordance with the Contract Change Control Procedure in Schedule 3 of the General Order Form.

d. Maintaining an index of the pertinent parts of the Agreement, modifications and business agreements, contract correspondence and letters, and other agreed information and documentation pertinent to the Agreement

e. Managing contracts and modifications, resolving all issues affecting the Services compliance; ensuring the Contractor's fulfilment of its obligations under this Agreement; ensuring satisfaction of legal requirements; advising management of contractual rights and obligations

f. Run benchmarking exercises in cooperation with the Customer's Contract Manager (discretionary/infrequent activity).

8.2.7 Project Manager

The Contractor's Project Manager has the overall accountability of the performance of the Project team for the day-to-day running and delivery of the Project. The primary governance-related responsibilities of the Project Manager consist of:

a. Working with the Customer's Project Manager to ensure smooth day-to-day running and delivery of the Project

b. Managing project deliverables to schedule and budget, identify risks and mitigation strategies and report as required

c. Single point of contact to vendors for delivery including escalation point.

8.2.8 Lead Solution Architect

The Contractor's Lead Solution Architect has the overall responsibility and accountability of the architectural design of the ROC technology solution. The primary governance-related responsibilities of the Lead Solution Architect consist of:

a. Working with the Customer's ROC Technology Lead Architect to ensure a consistent approach to architectural design of the Technology component of the ROC Program

b. Working with and guiding the Contractor architects in defining the technology solution, specifically supporting the Solution and Integration Architects.

9 Customer's Key Roles in the Governance Structure

9.1 Overview

The Customer shall fulfil the following six key roles in the joint governance structure for the purpose of providing Services as per this Agreement:

a. Chief Information Officer

b. ROC Program Director

c. Technology Program Manager

d. ROC Technology Lead Architect

e. Commercial Manager

f. Release Project Manager

Each role can be conducted by one or divided into a small number of individuals. The Customer can decide if an individual shall conduct more than one role.

The primary governance-related responsibility for each key role is specified in Section "Key Roles and Responsibilities".

9.2 Key Roles and Responsibilities

9.2.1 Chief Information Officer

The Chief Information Officer is responsible for representing the Customer at Executive Meetings. The Chief Information Officer's key focus is on the strategic relationship with the Contractors in order to ensure the ROC Technical Solution is implemented in accordance with the Customers' operational and budgetary requirements.

9.2.2 ROC Program Director

The Customer Program Director is equivalent to the Contractor's General Manager and responsible at the strategic and executive level for management of the relationship. The Program Director shall:

a. Provide executive sponsorship of the strategic relationship

b. Communicate the Customer's IT strategy to the Contractor. c. Provide direction and leadership to the ROC Program's Stream Leads

9.2.3 Technology Program Manager

The Technology Program Manager is responsible for overseeing the delivery of Services by the Contractor. The primary governance-related responsibilities of the Technology Program Manager include:

a. Interacting with the Contractor's Account Executive

b. Providing management support and guidance to the Customer's governance organisation including removing obstacles that impede success in a timely manner

c. Where applicable, approving Service Credit and Incentive settlement. Approving and authorising the Contractor's invoices to the Customer

e. Ensuring the Customer meets agreed-upon deadlines

f. Providing strategic dispute resolution

g. Acting as the single point of contact for business users and gatekeepers for requests from business units

h. Supporting business units in clarification of ROC technology related issues

i. Working with the Contractor's Account Executive to revise scope of Services as required by the ROC Program

j. Reviewing key Risks and Issues

k. Approving prioritisation of Service Requests and Enhancements if needed.

9.2.4 ROC Technology Lead Architect

The ROC Technology Lead Architect is responsible and accountable for overseeing one or more Technology streams in the Project. The primary governance-related responsibilities of the ROC Technology Lead Architect include:

a. Working with the Contractor's Lead Solution Architect to ensure a consistent approach to architectural design of the Technology component of the ROC Program

b. Working with and guiding the Customer architects in defining the technology solution, specifically supporting the architects on the project: Solution, Infrastructure and Data Architects.

9.2.5 Commercial Manager

The Customer Commercial Manager has the primary responsibility for managing the commercial relationship, monitoring the Contractor's commercial performance against the Agreement and ensuring contract compliance. The Customer Commercial Manager shall work with the Contractor's Account Manager and Commercial Manager to achieve the goals and objectives of the contract regarding vendor management. The primary governance-related responsibilities of the Contract Manager include:

a. Interfacing with the Contractor's Account Manager and the Contractor's Commercial Manager counterpart

b. Extracting contract terms, Service Levels, and performance metrics that will be monitored and reported

c. Establishing the Customer's contract governance policies, procedures, tools, and templates

d. Ensuring internal stakeholder and the Contractor's awareness of and compliance with the Customer's contract governance framework

e. Regularly reviewing the Contractor's performance against the Agreement

f. Ensuring receipt of all reports from the Contractor as agreed in the Agreement.

g. Ensuring that a log is at all times updated and shared with the Contractor containing names and contact information of the Customer personnel holding contractual roles set forth in this schedule

h. Participating in negotiations for updates to the Agreement

i. Performing compliance oversight and review of the contractual elements defined in the Agreement, working with the Customer management and others to address and resolve compliance issues

j. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document

k. Review invoices and resolve any charge related issues with the Contractor's Account Manager

l. Coordinate benchmarking exercises (discretionary/infrequent activity)

m. Drafting amendments to the Agreement, including socialisation with the relevant internal and Contractor stakeholders.

n. Ensure approval of contracts and amendments in accordance with the Customer's policies and procedures, applicable laws, the Customer requirements in accordance with the Contract Change Control Procedure of Schedule 3 of the General Order Form

o. Reviewing the Contractor's performance to contract regarding Service Levels, Service Level Credits and any Service Level rebates.

9.2.6 Release Project Manager

The Customer Release Project Manager is responsible for the day-to-day running of the Customer side of the Project and for overseeing the delivery of the Project by the ROC Program Streams and the Contractor. The primary governance-related responsibilities of the Project Manager include:

a. Interacting with the Contractor's Project Manager

b. Providing management support and guidance to the Customer's governance organisation including removing obstacles that impede success in a timely manner

c. Ensuring the Customer meets agreed-upon deadlines at the Project level

d. Working with the Contractor's Project Manager to manage scope, schedule and budget

e. Identify Risks and mitigation strategies.

10 Issue Escalation Process

10.1 General

10.1.1 The Parties agree to implement and adhere to a defined escalation process for issues that arise regarding management of service delivery issues and the overall governance of the relationship.

10.1.2 Prior to a Party initiating the Escalation Process, the Parties should ensure all reasonable endeavours are undertaken to resolve the Issue at the technical level between the Contractor and the Customer's personnel, or between the Contractor and Other Contractor's technical-level personnel.

10.1.3 In the event that an Issue involves an Other Contractor, and is of a specific commercial nature, the escalation path should exclude the Contractor (System Integrator).

10.1.4 The Parties shall resolve issues in a constructive way that reflects the concerns and commercial interests of each Party. The Parties' primary objective and intent is to ensure that sufficient effort is made to have issues resolved by the appropriate levels of authority as soon as possible without the need for escalation.

10.1.5 In the event the Parties cannot reach a resolution of an issue at a given level, the Parties shall follow the Escalation Procedures, in terms of Notification, Documentation, and Request for Meeting, Escalation Path, and Issue Review as set forth in Section "Escalation Path".

10.2 Escalation Procedures

10.2.1 Notification

a. Either Party may decide that escalation is desirable when resolution of an issue appears unachievable at the current management level. In that event, the Party desiring escalation provides written notice of its intention to the member(s) of the other Party currently involved in the dispute.

b. At either Party's request, the Parties currently engaged in attempting to resolve the issue shall meet again to attempt resolution of the issue prior to escalation to the next level. When and if the issue cannot be resolved at the current management level, the issue will then be escalated after good faith attempts by the Parties to resolve the issue at the current level. However, at any time five days or more after an issue has been escalated to one of the levels in Section "Issue Escalation Path", a Party may, by notice to the other party, escalate it to the subsequent level.

10.2.2 Documentation

a. The Parties will jointly develop a short briefing document called Statement of Issue for Escalation that describes the issue, relevant impact and positions of the Parties. – Imola to check with Bon whether a separate document template is required for this "Statement of Issue for Escalation"; Kelly had provided an example template to use, should Bob wish to review that (raised by Kelly since this item is referenced in capitals).

b. Documentation shall be prepared with the sufficient basis for an appropriate consideration and conclusion.

10.2.3 Request for Meeting

a. A meeting will be scheduled with appropriate individuals with written notice. Parties will endeavour to meet as soon as possible, however no more than five (5) days from notification.

b. The Statement of Issue for Escalation will be sent in advance to the participants.

10.2.4 Escalation Path

The following diagrams depict the escalation paths based on the nature of the engagement with the Contractor. These are:

a. Systems Integrator and the Customer; and

b. Systems Integrator and the Other Contractors.

System Integrator (Contractor) / Sydney Trains (Customer) Escalation Path

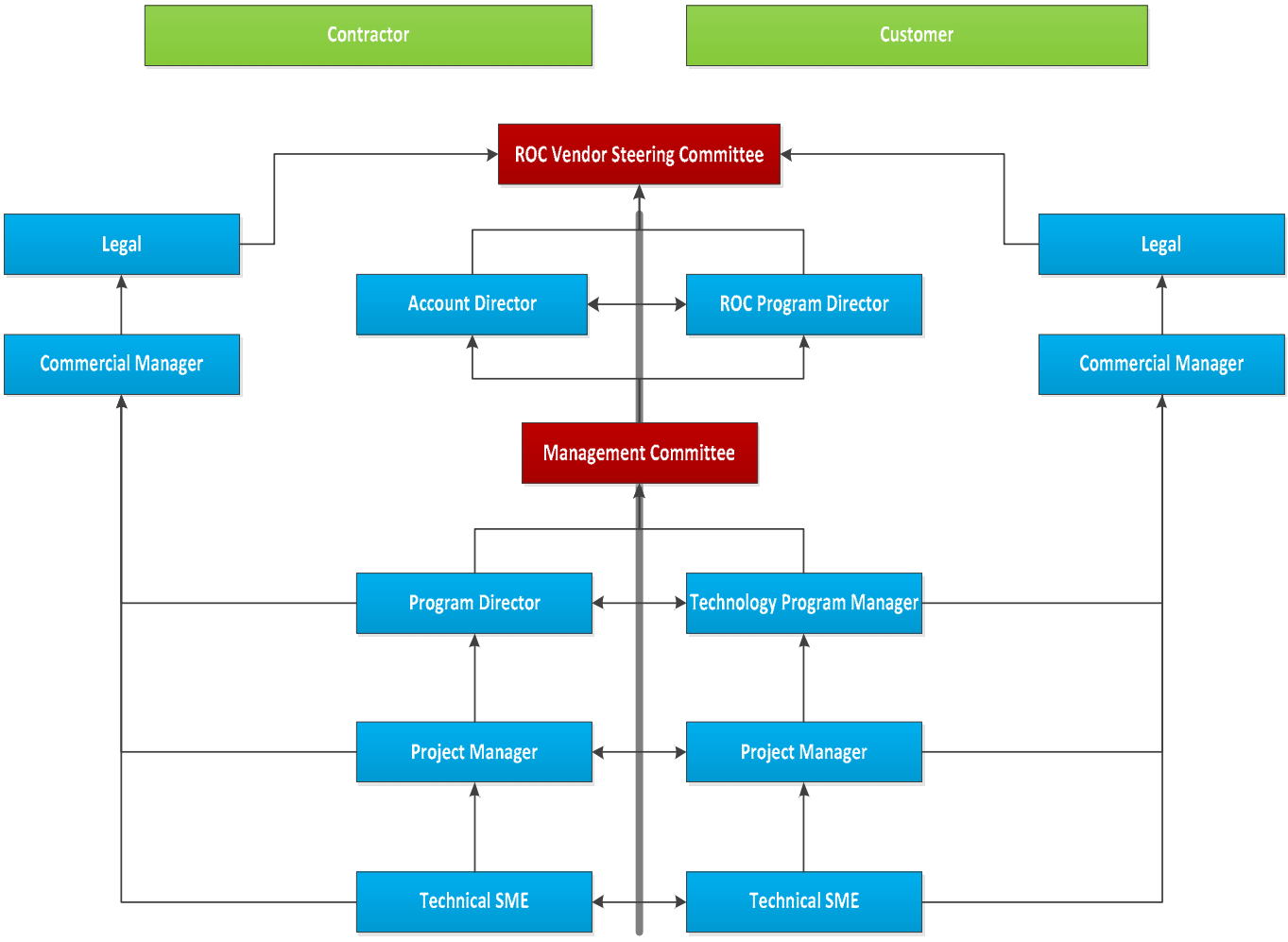


Diagram 3: System Integrator ("Contractor") / Sydney Trains Escalation Path Diagram

Systems Integrator (Contractor) / Vendor (Other Contractor) Dispute Escalation Path

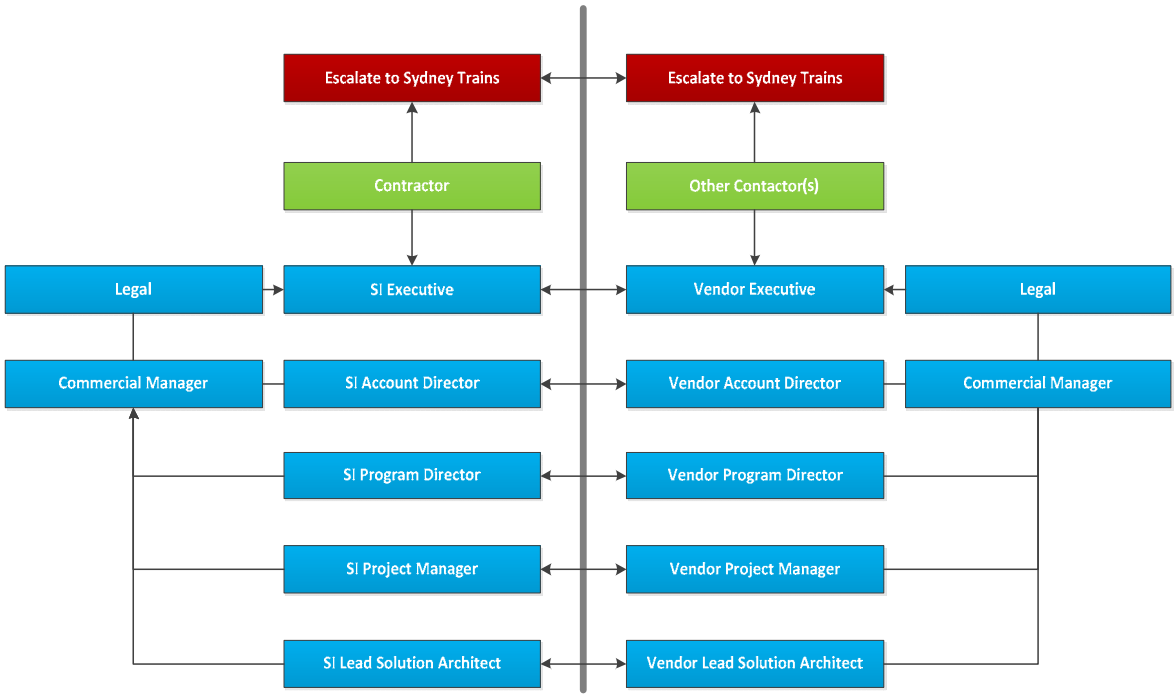


Diagram 4: Systems Integrator (Contractor) / Vendor (Other Contractor) Dispute Escalation Path

10.2.5 Issue Review

Each individual manager and process owner shall try to resolve any issues with their counterpart. If no agreement is made, the Parties should follow, wherever practicable, the above escalation path which attempts to resolve the issue at the counterpart level. From individual manager and process owner there are the following forums.

10.2.6 Technical Level

Wherever practicable, issues should be resolved at the technical level prior to escalation to the Vendor Management Meeting. The exception to the rule is instances where the discussion has the potential to have a quality, schedule or commercial impact. The following should be considered:

a. Is it a technological issue related to the Contractor's product or their performance?

b. Has the Customer contributed to the issue in terms of non-performance, delays in providing CSI, or failure to manage 3rd parties?

c. Is the Issue attributable to limitations of the Customer's technological environment?

d. If the issue cannot be resolved, it shall be treated according to the following contractual profile:

   i. Technological or delivery related issues should be escalated to the Vendor Management Meeting

   ii. Matters of a Commercial nature should be escalated to the Management Committee meeting.

10.2.7 Vendor Management Meeting

Escalation to the Vendor Management Meeting is only appropriate if the Parties have exhausted all options at the Technical level. Attendees at the Vendor Management Meeting shall investigate the issue and make their determination based on, but not limited to, the following considerations:

a. Is the issue attributable to lack of clarity of scope?

b. Was the issue a foreseeable event?

c. Is it a technological issue related to the Contractor's product or their performance?

d. Has the Customer contributed to the issue, in terms of performance, or technological limitations?

10.2.8 Management Committee Meeting

The Management Committee Meeting is the forum to discuss commercial issues escalated by a Party. Attendees at the Management Committee Meeting shall investigate the issue and make their determination based on, but not limited to, the following considerations:

a. Is the issue attributable to lack of clarity of scope?

b. Is this a technological issue?

c. Does the Contract support a particular Contractor's position?

d. Was the issue a foreseeable event?

e. Does the issue relate to partial or substandard performance by the Contractor and/or the Customer?

f. Has the Customer provided all necessary assistance, information, etc. to enable the Contractor to perform their work?

g. Has an Other Contractor contributed to the issue?

If the issue cannot be resolved, it shall be escalated to the ROC Vendor Steering Committee for final determination.

10.2.9 ROC Vendor Steering Committee

The ROC Vendor Steering Committee is the forum to discuss all outstanding technological, relationship or commercial issues escalated by the Management Committee Meeting. Unless it is unequivocal as to which party bares sole responsibility for an issue, the attendees' focus at the ROC Vendor Steering Committee should be to attempt to resolve the matter in a way that is conducive to the commercial interests of all Parties.

10.2.10 Issue Documentation after Resolution

a. Resolution of an issue must be documented and executed as a statement of fact. The documentation should additionally identify what further actions will be required to prevent reoccurrence: for example, changes in processes, contract variation etc.

b. Copies of the Issue Documentation must be retained in the shared document repository.

10.3 ROC Culture and Behaviours

The ROC Program adheres to the following meeting rules or "etiquette"[1]:

ROC Culture and Behaviors	
Meeting Etiquette **...** *ensuring meetings are efficient, collaborative & innovative*	
You should expect …	**You should challenge …**
An agenda and purpose for the meeting should be clear in the invitation (plus any pre-reading if possible).	Meetings without precise purpose and direction which linger and do not achieve an outcome.
Meetings invitations to be sent and responded to in good time.	People tentatively accepting or declining a meeting invitation without providing a reason.
Scheduled breaks for longer meetings, so e-mails and phone messages can be checked.	People 'reading under the table', scrolling through emails, texting, internet surfing, etc... ***Note**: if this happens, perhaps the meeting is not focused enough, or the wrong people are there*
People arriving early so meeting can start on time.	People arriving late, expecting others to brief them. ***Note**: if you miss part of the meeting, you lose your right to complain later about decisions made*
Mobile phones turned to silent. 'Only step out for extraordinary calls.	Use of mobile phones which distract meetings.
Comments to be held until the speaker finishes, however legitimate interjections and clarifications should be made appropriately.	Interruptions that are not constructive or on topic.
Being respectful of all inputs, feedbacks, opinions – even if they challenge the status quo.	Input that isn't made constructively.
People using 'I statements' to share their experiences with frank, honest and powerful words.	People starting statements with 'they', 'we', 'you', or otherwise trying to speak on behalf of groups not in the room.
A meeting to finish at least 5 mins before the allotted time; allowing others to get to next commitments on time	Meetings that extend past the time allotted or make you late for your next commitment.
Your Challenge: ***Can you achieve your objectives and reduce meeting time?***	

[1] Reference - Sydney Trains document: *ROC Meeting Etiquette Poster.docx*

11 Stakeholder Engagement Matrix

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
Meetings	**Executive Meeting**	The Executive meeting is the forum from which executives from Sydney Trains and the Systems Integrator discuss the progress of the project and potential future opportunities.	- CIO (Chairman) - General Manager (relative Business) - ROC Program Director (supports the CIO).	- CEO - CIO - Senior Account Manager, or "C" level representative	i. Resolution of risks and issues related to the overall relations between the Customer and the Contractor ii. Overall performance against business goals iii. Where applicable, revision of goals and long term plans for development of the relationship iv. Identify and discuss joint strategic business direction and opportunities v. As the highest level on the escalation path. Act as the ultimate point of joint dispute resolution.	i. Meeting Agenda ii. Minutes of previous meetings iii. ROC Vendor Executive Pack documenting contract performance iv. Recommendations as escalated from the ROC Vendor Steering Committee v. Critical Risk and Issues derived from the Risk and Issues Register vi. Decision log	Contractor 48 hours	Annually
	ROC Vendor Steering Committee	The ROC Vendor Steering Committee is the primary focal point for executive and strategic decisions, as well as the escalation point for resolution.	- CIO - GM Strategic Procurement - ROC Program Director The following report into this meeting: - Commercial Manager - ROC Program Stream Manager	- GM responsible for Account, or "C" level representative The following report into this meeting: - Project Director	i. Project update ii. Strategic direction of the ROC Program iii. Status of the relationship between the Parties iv. Project budget / incentive opportunities v. Future opportunities associated with the ROC Program and Sydney Trains in general vi. Escalated risk raised by the Management Committee	i. Meeting Agenda ii. Minutes of previous meetings iii. Joint DRICA ("A" and "B" risks only)	Contractor 48 hours	Monthly
	Multi-Vendor Management Committee	The Multi-Vendor Management Committee deals with governance between all Parties to the ROC Program and as a consequence, expressly excludes discussions relating to commercial matters of any party: e.g. Contractors financial affairs, product strategic direction, IP etc.	- ROC Program Director - Technology ROC Program Stream Manager - Commercial Manager NOTE: Attendees should not be Vendor Management Meeting attendees	- Senior Account Manager - Program Director NOTE: Attendees should not be Vendor Management Meeting attendees	i. Project status and update ii. Schedule Management iii. Relationship Management iv. Proposed efficiencies / business improvement v. Future scope opportunities associated with the ROC Program vi. Escalated risk raised by the Governance Meeting vii. General business	i. Meeting Agenda ii. Minutes of previous meetings iii. Joint DRICA ("A" and "B" risk only)	Contractor 48 hours	Quarterly / ad-hoc as required
	Management Committee (Individual Contractors)	The Management Committee (Individual Contractors) conducts governance on a managerial level and is primarily focused on ensuring vendor performance, relationship management and commercial performance, including change requests, invoices, service credits and incentives.	- ROC Program Director - ROC Program Stream Manager - Commercial Manager NOTE: ROC Release Project Managers (reports into this meeting)	- Senior Account Manager - Program Director NOTE: Contractor Release Project	i. Project status and update ii. Schedule Management iii. Commercial Management iv. Relationship Management v. Proposed efficiencies / business improvement vi. Future scope opportunities associated with the ROC Program vii. Escalated risks raised by the Multi-Vendor Management Meeting viii. General business	i. Meeting Agenda ii. Minutes of previous meetings iii. Project Status Update Pack iv. Joint DRICA ("A" and "B" risks only)	PMO Representative 48 Hours	Monthly

Communication Plan

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
				Managers (reports into this meeting)	All of the above is included in a pack with the status update and prepared by the vendor			
	Vendor Management Meeting	The Vendor Management Meeting focuses on the overall service delivery of the Contractor and Other Contractors. Vendor Management Meetings should be conducted by the Project Managers. Issues to be discussed include: progression of the relative stream, service delivery, quality, issue clarification and resolution etc. No commercial matters are discussed at this level due to the involvement of a number of different vendors.	- ROC Release Project Manager (relative) - Technology Architect or nominated delegate	- Release Project Manager - Project Coordinator - Nominated technology SME	i. Performance against the schedule ii. Proposed scope changes iii. Deliverable status, including acceptances iv. Resource planning v. Customers CSI compliance vi. Risks and Issues vii. Escalation points for Management Committee Meeting	i. Meeting Agenda ii. Minutes of previous meetings iii. Project Highlight Report iv. Risk and Issues derived from the Risk and Issues Register	Contractor 48 hours	Weekly
	Technology and Risk Management Meeting	The Technology and Risk Management Meeting is the forum to discuss and provide recommendations on IT architecture, standards, and all aspects of risk management and IT security.	- ROC Technology Lead Architect - Technology Program Manager - ROC Release Architect - Relevant Release SMEs	- Program Director - ROC Release Architect - Relevant SMEs	i. Review and propose technology directions, standards and architecture ii. Discuss and approve new and innovative services proposed by the Contractor iii. Discuss and review cross-vendor technology issues iv. Review impact of introducing applications into the legacy environment v. Propose changes to architecture and IT standards for approval by the Customer's architecture team vi. Review any proposals for reductions in the costs of the Services driven by new technology vii. Explore and understand innovations in technology that could enable business benefit for the Customer viii. Proactively propose, describe and plan innovation initiatives and provide innovation project recommendations to the Executive Level ix. Align security architecture, policy and operations x. Plan, review and monitor joint security initiatives and requirements xi. Evaluate risk management issues including both actual risks and contingencies xii. Evaluate recommendations in regard to proactive measures and remediation xiii. On request from the ROC Vendor Steering Committee investigate opportunities for innovation or other special tasks within that area xiv. Resolve any issues promptly and escalate if necessary in accordance with Section (Issue Escalation Process) in this schedule	i. Product roadmap and plan ii. Proposed changes on architecture and application landscape iii. Report of innovation in technology iv. DRICA	PMO Coordinator	Quarterly
	Operational Meetings	The Operational Meetings are ad hoc meetings held between the relevant Parties to assess technology specific issues: e.g. testing, availability and configuration of environments, security,	- Relevant SME's - Release Project Managers (o) - other key personnel (o)	- Relevant SME's - Release Project Managers	As Required	As Required	There are no minutes however action items are taken and	As required

Communication Plan

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
		integration, configuration and customisation issues, etc. Attendees are the SME's and, depending on the nature of the issue being discussed, may also require the involvement of the Release Project Managers and other key personnel. No commercial matters are discussed at this level as attendees are not involved in financial / contractual management.		(op.) - Other key personnel (op.)			distributed	
	Project Management Forum	The Project Management Forum Meetings are meetings held fortnightly between the ROC Technology and Contractor Release Project Managers. This meeting is a discussion forum for the project managers on the ROC Technology Program to share understanding and issues and ensure alignment of project management activities across the Program.	- ROC Technology Release Project Managers	- Release Project Managers	i Master Schedule overall ii. Potential blockers, emerging issues, threats iii. Relationship Management iv. Lessons learnt, good practice share v. Collegiate advice vi. Future horizon planning	The material is as required to support the subjects being discussed	There are no minutes however action items are taken and distributed	Fortnightly
Reports	**Project Highlight Report**	Generated weekly per ROC Release and contains: Key Indicators (Project RAG Status); Milestone, budget and overall project update with particular explanations of any amber or red items; PIPP Deliverable updates; DRICA updates; Change Requests/updates & Action Items	- ROC Technology Program Manager - ROC T&C Program Manager - ROC Commercial Manager - SI Project Director - Customer and Contractor Release Project Managers - Customer and Contractor Lead Architects	- Release Project Managers - Release Team Members if/as required		PHR Report	PHR Report	Weekly
	Project Status Update Pack	Developed and presented during the Management Committee Meeting	Distributed to attendees of the meeting	Distributed to attendees of the meeting	Pack covers the following items: i. Project status and update ii. Schedule Management iii. Commercial Management iv. Relationship Management v. Proposed efficiencies / business improvement vi. Future scope opportunities associated with the ROC Program vii. Escalated risks raised by the Multi-Vendor Management Meeting viii. General business	N/A	PMO Coordinator	Monthly

Appendix K – Initial Requirements

Frequentis Initial Requirements.pdf

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
Detect				
IMS-CAP-001	The ability to integrate with various alarm sources, systems and technology to receive automated alerts. The type of automated alerts is to include but not be confined to: • Service delays received from DTTS, • Signal passed at danger, • Condition Monitoring, • Signal failure, • Points failure, • Overhead wiring failure, • Social media feeds, • Dwell time, • Section running time Lost, • Control system failure, • Technology failure, • Electrical failures / SCADA Network, • CCTV, • Alerts received from other incident management systems. Note: Please refer to NER for details on interfacing standards and technologies	**E**	Configuration	The product has a generic interface for creating incidents based on alerts raised from various upstream systems (e.g. asset monitoring, camera feed, incoming emergency calls, other incident management or condition monitoring systems). Incoming alerts are aggregated in a separate alert monitor view which allows users to create incidents or dismiss alerts.
IMS-CAP-002	The ability to create a network incident notice. Details to be captured for example are: • Issuers name, • Designation, • Contact details, • Relevant factual information, • Asset Information, • Weather (Forecast, actual, variance , actions).	**E**	Out of The Box	The product allows the generation of predefined reports and can export defined incident information to downstream systems as specified in IMS-CAP-044, IMS-CAP-045, IMS-CAP-046, IMS-CAP-047.
IMS-CAP-003	The ability to receive and input manual alerts. For example: • Phone call, • Text, • Email, • Web, • Mobile application. Phone calls are to be: • Recorded and entered into IMS, • Directed to the appropriate staff member. Note: All manually captured information is to be captured as structured data, this may involve prompts and human interaction.	**E**	Configuration	Users can create new incident records based on manual alerts received. Manually captured information can be filled out in the corresponding data fields, while unstructured data can be correlated to incidents as file attachments. REM supports integration with voice recording systems.
Record and Assess				
IMS-CAP-004	The ability to receive Network Incident Notices. For example: A network Incident Notice must be issued as soon as possible when an incident occurs on the rail network, and involves: • Actual or potential loss of life or injury, • Actual or potential damage to or defect in network infrastructure, • Damage to or defect in rail traffic, • Breach of Network Rules or Network Procedures.	**E**	Configuration	Network Incident Notices are treated and processed similarly to incoming alerts in the alert monitor view as specified in IMS-CAP-001, allowing the user to create an incident record based on the Network Incident Notice.
IMS-CAP-005	The ability for users to search and filter alarms. For example filter by: • Type of alarm, • Location of alarm, • Time and date of alarm.	**E**	Configuration	The alert monitor view allows users to filter alerts by type/source, location, time/date.
IMS-CAP-006	The ability to supress automatically created alarms. For example suppress automatically generated alarms, including but not limited to: • all persons/departments (e.g. false alarms), • by individual alarm instance, alarm type and/or department, • during shunting operations, • during manual proceed authorities (non-signalled movements).	**E**	Customisation	The suppression of alarms from alarm source types, e.g. CCTV, or specific sources e.g. a concrete CCTV camera can be configured. The suppression can be configured for a limited time interval. The display of alarms coming from certain alarm source types can be suppressed by the administrator for all users / roles.
IMS-CAP-007	The ability to manually create and update incident records. For example incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	The creation and management of incident records is one of the product's key capabilities. Incident records can follow a predefined template, or follow a configurable workflow consisting of configurable checklists and functional modules.
IMS-CAP-008	The ability to automatically create and update incident records based on predefined business rules. Incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	A newly raised incident is automatically provided with a unique identifier. A title can be suggested based on the incident category, location, Incident ID or other criteria. See IMS-CAP-007 for predefined and custom incident templates.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-009	The ability to automatically record incident details. The details and business rules required to automate the capture of incident details need to be configurable. For example details captured may include: • Users name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (Location of train, geographic location etc.), • Reporting system, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers), • Reference data, • Weather, • Events near by. Note: The details required will change based on the type of incident being recorded. It is envisaged that automatically created incident records will require some level of manual input to capture data elements which are not provided by other integrated systems.	**E**	Configuration	Incident details can be automatically filled or updated based on business rules, e.g. incident type, location and priority based on the alert source; weather data from an external service, affected services based on the incident location and impact etc.
IMS-CAP-010	The ability to manually record incident details. For example user may be prompted as to details required based on: • Users role (by either selecting from list or manually typing), • Type off Incident. Incident details may include: • Users Name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (can be location of train, geographic location etc.), • Reporter, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers) • Reference data • Weather, • Events near by. Note: The details required will change based on the type of incident.	**E**	Out of The Box	Incident details can be captured manually. The specific details are configurable for different incident templates. The product allows the recording of incident details as combo boxes or dropdown lists, radio buttons or checkboxes and text boxes.
IMS-CAP-011	The ability to correlate multiple incident records into a single incident record. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	Out of the box: The product allows the creation of a master incident record for aggregating separate incidents that are tied to or caused by the same event. Duplicate incident records can be cancelled without loss of lawful recording information. Customising: Rules for merging of incidents have to be elaborated together with the customer.
IMS-CAP-012	The ability to prompt users in the correlation incident records based on predefined business rules. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	It is possible to identify incidents that are potentially tied to or caused by the same event based on predefined business rules, such as correlating incident location and category for incidents within a certain configurable time frame.
IMS-CAP-013	The ability to receive a list of affected train services in real time from an external system and associate these with an incident. For example: • Receive a list of affected services associated with a single incident, • Impact the incident had on each service, • The number of passengers travelling on each service, • The time in which the service returned to planned stopping times.	**E**	Configuration	The affected train services can be acquired from the DTTS in real time and can be referenced to the IMS incident. REM out of the box contains an interface to Thales Aramis-D.
IMS-CAP-014	The ability to easily indicate the impact an incident is having on services either manually and / or automatically. For example users may be prompted / supported by the system to capture impact details. Impacts could be to: • Specific runs, • Runs on a line, • Runs passing through a stations, • Cross modal transport, • Stations. Types of impact will include: • Delays, • Cancellations, • Altered stopping patterns, • Change route, • Alternative transport.	**E**	Configuration	The impact of an incident on services can be determined in conjunction with interface data from the DTTS. Out of the box, REM contains an interface to Thales Aramis-D.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-015	The ability to retrieve asset information from an external system in real time. For example: • Sets, • Stations, • Lines, • Overhead wiring, • Signals, • Points, • Assets maintenance schedules (Over due, next planned etc.).	**E**	Customisation	Asset information can be retrieved from an external ERP solution (Ellipse, SAP).
IMS-CAP-016	The ability to view the availability of incident response personnel. For example: • View availability of staff already in operation, • View the availability of standby crew or response personnel, • View the capabilities of crew (i.e. trained to operate which set types), • View contact details, • View current location of staff in operation. Note: Requirement linked to IMS-CAP-026	**E**	Customisation	The product provides a checklist view which allows the assignment of action items to selected personnel. The user is prompted with a selection of incident response personnel, along with contact details, each flagged as available or unavailable. The crew capabilities can be stored as (an) additional attribute(-s) or linked documents. The response team has to acknowledge or deny the task assignment and report the completion of the task. The current location of response teams can be determined by devices allowing GPS tracking. Those devices are not part of the product. Using GPS tracking devices to localize personnel may lead to legal issues.
IMS-CAP-028	The ability to assign / action response team / personnel. For example: Provide assignee with visibility of: • Competence, • Availability of response teams, Provide response teams with: • Notification of action including all details required (fault type, location etc.), • Ability to accept / reject action, • Provide checklist of actions to address.	**E**	Customisation	The assignment of action items to response teams is described in the requirement IMS-CAP-016. Response teams can be provided with incident information and checklists containing action items using the product's Mobile Client. The Mobile Client allows the user to accept or reject actions. Furthermore, incident information can be distributed using the product's outbound communication channels as specified in IMS-CAP-025
IMS-CAP-017	The ability to identify the location of an incident on a geospatial view. For example: • Incidents location in relation to rail network assets, • Location based on the geospatial coordinates of the incident, • Street view, • Aerial view, • Terrains view, • Mark up map with location / notes, • Ability to geo reference, • Identify site / incident access points etc.	**E**	Out of The Box	The location of an incident can be identified and displayed in the integrated GIS View. Additional layers containing rail specific information (e.g. assets, access points, railway tracks and stations,..) or general information (street and terrain view) can be displayed in the GIS View. The integrated GIS view allows the user to automatically focus on the entered incident location.
IMS-CAP-018	The ability to manually add an estimated recovery time to an incident record. For example: • Estimated recovery times, • Estimated response times. Note: This estimate may be based on historic data or user knowledge.	**E**	Out of The Box	It is possible to set estimated response and recovery times for incident records.
IMS-CAP-019	The ability to automatically add an estimated recovery time to an incident based on configurable business rules. For example: • Estimated recovery times, • Estimated response times. Note: It is envisaged these automated estimations will be applied based on historic data.	**E**	Customisation	The product allows a basic configuration of business rules based on a defined number of incident details (e.g. type, weather condition) that automatically add an estimated response and recovery time for incident records.
Select / Define and Activate Response Plan				
IMS-CAP-021	The ability to initiate a workflow in response to creating an incident record. For example: • Initiate relevant workflow / response plans.	**E**	Out of The Box	The product allows the initiation of workflows based on defined business rules. For example, alerting of internal and external response teams, assigning tasks to response teams or an automated information of affected Rail Undertakings.
IMS-CAP-022	The ability to initiate manual predefined response plans. For example: • Provide plans to support Train Controllers or incident personnel in decision making. • Initiate alternate transport plans.	**E**	Out of The Box	Predefined response plans can be initiated as workflow-based checklists that allow the distribution of information to the involved parties.
IMS-CAP-023	The ability to create and initiate ad-hoc response plans. For example: • Create plans to respond effectively to rare / unusual incidents.	**E**	Out of The Box	Custom action items can be added to the checklist during the resolution of the incident. Each action item has a fixed set of attributes (Title, Description, Assignee, Timestamp/Range, Priority). Additionally, REM supports merging response plans for different types of incidents to cover rare and unusual incidents.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-025	The ability to provide notification services to selected personnel For example: • Push based notifications, • Pull based notifications, • Subscription based notifications, • Push media update. Manage notification distribution lists and groups and business rules: • Create, • Read, • Update, • Delete, • Notifications to be distributes in near real time. Note: Notification may include notifying crew / operational staff of CAN warnings (Condition Affecting Network (i.e. Temporary Speed Restrictions) Notifications will also be distributed to management/ executives and other 3rd parties.	**E**	Out of The Box	Outgoing notifications can be manually or automatically sent to various channels, i.e. Short Message Service, email, Voicemail or as push/pull based notification. REM includes a configurable rule engine that determines who has to be informed about which incidents, and using which communication channel. Notification distribution lists can be configured.
IMS-CAP-026	The ability to track and display the location of all response teams / personnel: For example: • Location indicated on a map / geospatial display, • Roster information, i.e. the availability of team / personnel, • Current list of assigned actions assigned. Note: Requirement linked to IMS-CAP-016	**E**	Out of The Box	The integrated GIS View, automatically focusses on the incident location and displays the location of response teams associated data (assigned actions, roster information) in a dedicated layer.
IMS-CAP-027	The ability to view a current list of consumables that a teams / personnel are in possession of. For example: • Consumables required to fix / address a fault, • Tools required to fix / address a fault, • Vehicle type (specific vehicle type may be required to access a fault), • Historical analysis.	**E**	Customisation	The product is capable of displaying specific information (e.g. consumables, tools,…) about incident teams, retrieved from an external source system.
IMS-CAP-029	The ability for mobile personnel capture incident details when responding to a incident. For example: • Response teams capture and provide more details (via forms and checklists), • Reponses teams are able to view the latest details / information captured by other staff members.	**E**	Out of The Box	Response teams can be provided with a mobile client of the product that allows the capturing of incident details.
IMS-CAP-030	The ability to create predefined workflow / check lists for different types of incidents. For example different types of incident groupings will include: • Equipment, • Miscellaneous, • People, • Trains, • Weather Conditions. Note: Different types of incident will require involvement from different personnel and 3rd parties. Ability to: • Create, • Read, • Update, • Delete.	**E**	Out of The Box	Incident categories, workflows and checklists are configurable. Access rights for checklist items can be configured.
IMS-CAP-031	The ability to assign an incident actions manually and / or automatically. For example: Assign incident actions to a: • Business group / division, • Individual staff member. Assigning Incident records / actions to be: • Manual and / or, • Automated based on predefined criteria / metadata. Note: It is envisaged that workflow will have predefined actions and potential business groups / divisions responsible for them however this requirements allows for additional actions to be assigned.	**E**	Customisation	The product allows a rule based or manual assignment of incident actions to selected personnel. Incidents can be assigned to users or roles (corresponding to divisions). A filter functionality allows users to see incidents assigned to them.
IMS-CAP-032	The ability to manually override / skip workflows and checklists. For example authorised user able to depart: • Predefined Workflow, • Predefined Activity, • Predefine Checklist.	**E**	Out of The Box	The product allows workflows, activities and checklists to be skipped or processed in an arbitrary order unless mandatory for the completion of the workflow.
IMS-CAP-033	The ability to manually re-assign a workflow activity to a different individual or role. For example: • Initial assigned user unable to action task.	**E**	Out of The Box	The responsibility for the workflow activity can be changed to a different individual or role.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-034	The ability to distribute response plans to selected personnel electronically. For example via: • Web based application • Mobile application. **Note:** It is envisaged that distribution business rules would be managed as part of workflow.	**E**	Out of The Box	Response plans can be distributed to selected personnel by various communication channels or a web/mobile client.
IMS-CAP-035	The ability to provide a collaborative working environment in which multiple user will have the ability to simultaneously access and update incident details in real-time. For Example internal and external users provided with: • Visibility of incidents via multiple mechanisms: • Video, • Conferencing (calling and video), • Web, • Application based, • Notification, • Phone, • Mobile App, • Ability to provide input / suggestions. These would be managed through role based permissions. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan • Red indicates that required actions for the incident are not tracking to the response plan.	**E**	Out of The Box	The product allows multiple users to simultaneously access and update incident details. Incident information can be made available in the web and mobile client or distributed as outlined in IMS-CAP-025 (Short Message Service, email, Voicemail or as push/pull based notification). An incident overview allows users to track the progress of multiple incidents, allowing a graphical representation as traffic lights.
Track and Escalate				
IMS-CAP-038	The ability to record action(s) within an incident record. For example record action information such as: • Calling emergency services, • Calling operational staff, • Timestamps. The status of an action is monitored on its own and as part of the overall workflow, including but not limited to: • Overall status, • Time-forecast to complete, • Action completed, • Action authorisation (whom, when etc. where applicable), • Incidents and actions are tracked until completion, • Critical issues, • Constraints & Dependencies.	**E**	Out of The Box	Every single action for incident handling is logged and flagged with an automatic system timestamp, which cannot be overwritten. Additionally, the user can manually set a timestamp for specific events during incident handling (which is tracked separately). Otherwise, the timestamp is automatically filled with the current time. The tracked information allows the monitoring of the incident's status, action authorisation and completion as well as derived issues, constraints and dependencies.
IMS-CAP-039	The ability to provide visualisation capabilities to easily assess an incident and the status of its progress. For example: • On a rail schematic map, • On a geospatial map, • Affected service(s), • Related assets/equipment e.g. gates and assets, • Likely impact. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan, • Red indicates that required actions for the incident are not tracking to the response plan, • The ability to display a heat map to visualize or alert over crowding on platforms.	**E**	Customisation	The product allows for the integration of an existing GIS view. A web based GIS view can be integrated in a widget within the incident record detail view or in a separated application window. Given an interface that allows for raising a zoom to location action, the GIS view can automatically focus on the incident location provided by the user. There are various alternatives for integration, that need to be specified in detail in the ECI phase. The GIS View allows for the localisation of an incident, as well as related asset information (if provided by an ERP system as outlined in IMS-CAP-015). The impact on affected services can be determined in conjunction with the DTTS solution and visualised within the GIS view. The incident progress can be tracked as specified for requirement IMS-CAP-038. Overcrowding of a platform in form of heat maps can be visualized in the GIS view, requiring external data. Additionally, the product allows network drive integration to provide specific information (in the form of documents, spreadsheets or checklists) for the relevant railway installations.
IMS-CAP-040	The ability to track the progress / monitor incidents from creation until completion. For example: • Overall status, • Time-forecast to completion, • Action completed, • Action authorisation (who, when etc.), • Assignment information (assigner, assignee, time/date of assignment), • Updates made to the record (new comments, change to 'fields' such as the incident's category, priority etc.), • Internal communications distributed, • Customer Information distributed.	**E**	Out of The Box	All of the exemplary data (i.e. every single action taken within the incident record and interface communication) is fully logged and flagged with an automatic system timestamp.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-041	The ability to manually and / or automatically escalate a activity or task based on a pre-defined business rules. For example: Business rules are to be configurable. Automated escalation based on: • Time boxed activities, (an incident has not 'progressed' (no record update) for a specified timeframe) • Assignee not available. Manual escalation required where: • The incident itself has risen to the next severity level. • An incident has no response plan after a specified timeframe • Category, severity, priority.	**E**	Customisation	The product allows an automatic (rule-based) or manual escalation of incident action items to defined roles or personnel.
IMS-CAP-042	The ability to manually prioritise incident, actions and activities. For example: • Change priority due to severity.	**E**	Out of The Box	The incident's priority can be set in the corresponding data field.
IMS-CAP-043	The ability to filter views and create real-time and post event incident reports. For example: • All current ('open') Incidents, • All Incidents of a given status. Views of an incident can be customised as different staff (e.g. different profile, location, team etc.) will require different information. Ability to export report based data through a standard based interface.	**E**	Out of The Box	The incident list allows custom filters and sorting and can be exported as .csv/.xls.
IMS-CAP-067	The ability to adjust the boundaries which define the areas of responsibility for users. For example: • Train controller boundaries / sectors (Boards), • Response teams areas of responsibility.	**E**	Out of The Box	The product allows the definition of boundaries/areas of responsibility for different roles, based on time and incident location.
IMS-CAP-068	The ability for users to reserve a incident number in the system without having to provide incident details.	**E**	Out of The Box	An incident number can be reserved providing a minimum of mandatory fields specified by the customer.
Close and Report				
IMS-CAP-044	The ability to create electronic record (package) containing all incident record details and its associated / linked data files. For example: Details may include: • Origin of the Alarm / Incident (e.g. source system, user name), • Priority, • Time of alarm, • Incident ID, • Incident Level, • Cause, • Creator, • Impact on customers. • Time and Date. Other linked data may include: • CCTV, • Phone calls recorded, • Emails, • Text message, • PDF, • Photographs.	**E**	Configuration	The product allows the generation of predefined electronic records.
IMS-CAP-045	The ability to provide incident information to other downstream systems in real-time. For example: • Basic incident information, • Impact on services, • Expected restoration times. Note: Impact to trips, line and station would need to be received from DTTS.	**E**	Out of The Box	The product provides a default XML export functionality of incident details.
IMS-CAP-046	The ability to generate defined and ad hoc reports on incident status.	**E**	Out of The Box	The product can generate defined and ad hoc reports.
IMS-CAP-047	The ability to export safety related incident information in real time to an external system. Note: Refer to IMS architecture for interfacing systems.	**E**	Out of The Box	Incident data can be exported to external systems.
IMS-CAP-048	The ability to export incident details to a data warehouse.	**E**	Out of The Box	Incident data can be exported to a data warehouse solution.
IMS-CAP-050	The ability to manage business rules for closing incident records.	**E**	Out of The Box	Business rules for closing an incident can be defined (i.e.status-depenant mandatory fields or action items).
Other Capabilities				

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-051	The ability to create scheduled reports based on predefined criteria. For example: •Annually, Monthly, Weekly, Daily, Adhoc, • Date / Time, • Incident Reports, • OCR Reports, • NIN Reports, • CAN Reports, • AM Peak Composition Reports, • PM Peak Composition Reports, • AM Peak Summary Reports, • PM Peak Summary Reports, • Delayed Crew Reports, • NIN Report - Outstanding, • NIN Report - Date Raised, • Inactive User Reports, • Other reports such as: Ministerial reports, punctuality reports, sick passengers reports, airport line performance reports, maintenance incident reports etc.	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom reports. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required reports. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-052	The ability to manage (C,R,U,D) predefined reporting templates. Note: Business needs are constantly evolving therefore it is envisaged that report templates will need to be updated and new report types will need to be created.	**E**	3rd Party	JasperReports includes a report designer that allows the creation of custom reports.
IMS-CAP-053	The ability to manage (C,R,U,D) reference data. For example: • Import reference date, • Manage the different categories of incidents, • Manage Incident coding (used for attribution), • Asset information, • Stations, • Line, • Sectors, • Fleet types. Ability to: • Create (access / import) • Read, • Update, • Delete, • Export.	**E**	Out of The Box	The product is supplied with a separate Data Management Client which allows the management of reference data.
IMS-CAP-055	The ability to provide access to incident information to mobile / operational staff and 3rd parties external to the ROC. For example the ability to: • Provide real-time access to users and 3rd parties, • Received incident updates from a mobile device, • Ability to create incident notifications, • Provide a mobile collaborative work place, • Optimise data for mobile devices.	**E**	Out of The Box	The product is supplied with a mobile client which provides users with real-time incident information. The mobile client allows response teams to capture incident information or manage action items. The product allows the distribution of incident information via SMS, email and Voicemail.
IMS-CAP-056	The ability to manually and automatically link / attach relevant information to an incident record. For example the ability to link the following types of data to incident records: • CCTV & video footage, • Photographs, • Diagrams, • Pictures, • Phone call recordings, • Documents.	**E**	Out of The Box	Arbitrary attachments can be uploaded in a network drive and linked to the incident record. Links to relevant incident information can be captured in the incident details.
IMS-CAP-057	The ability to create, manage and maintain workflows, templates and checklists. For example: Workflows, Checklist, Templates we require the ability to: • Create, • Read, • Update, • Delete. Workflow capabilities to manage: • Business processes, • Activities (manual and automated), • Deadlines, • Check lists, • Business rules, • Notifications, • Escalations, • User roles, • User permissions, • Process monitoring, • Administration, • Auditing. Note: It's envisaged that some safety / network rules could be incorporated into the workflows either as pointer or guidance or actions.	**E**	Customisation	The product's design philosophy focusses on a time critical response and resolution of incidents. Workflows are represented by configurable checklists and functional modules which control manual and automated activities, notifications and escalations and allow the capturing of incident details. Checklists and functional modules are configurable components that allow the modelling of workflows. Checklists are ordered and displayed depending on incident categories, incident location and time. Business rules can be set for action items in the checklist, for example, to automatically notify users. The product allows an in-depth administration of user roles and permissions. It is possible to monitor the overall progress of multiple incidents in the list view, while details for single incidents can be accessed through the incident view. The product integrates an audit log, which fully traces all activities that have affected at any time a specific operation, procedure, or event (see IMS-CAP-038).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-058	The ability to manage alarm business rules: For example: • Manage Hierarchy of alarms, • Automated suppression rules, • Associated workflows rules, • Notification rules (Colour, frequency, visual, brightness, audio, volume), • Trigger CCTV views. Note: Requirement related to human factors.	**E**	Configuration	Alarm business rules can be managed in the Administration Client.
IMS-CAP-059	The ability to manage the roles and their associated permissions. For example: • Create, • Read, • Update, • Delete. • Roles (for example: Train Controller, Shift Manager), • Groups, (Train Control, Customer Information, Signalling etc.), • Permissions (ability to supress alarm, depart workflow, assign workflow). **Note**: The roles need to be in alignment with and in consideration of roles defined in other systems.	**E**	Out of The Box	Roles, Groups and Permissions can be managed in the Administration Client.
IMS-CAP-060	The ability to filter /search and select incident records for viewing. For example: • Origin (e.g. source system), • Priority, • Time of alarm, • Most recently acknowledged, • Incident ID, • Incident Level, • Cause, • Creator, • Time and Date.	**E**	Out of The Box	The incident list represents a view of all incidents. Those can be can be filtered, searched and sorted by different incident attributes, e.g. incident location, category, time/date, origin,…
IMS-CAP-061	The ability to view or instigate raising or closing of defect records for assets whose defect has caused a delay to services. For example: • View defect records for assets, • Instigate opening defect record for a specific asset / incident, • Instigate closing a defect record for a specific asset / incident. **Note:** Defects are managed in Fault Management Systems.	**E**	Customisation	The IFMS interface allows the viewing, raising or closing of defect records.
IMS-CAP-062	The ability to integrate and share real-time and post event incident information with other systems. For example systems such as: • Customer Information Management System, • Dynamic Timetabling System, • Operational Video Display System (OVDS), • Business Intelligence Systems, • Calculation Engine, • Fault Management Systems, • Safety Management Systems, • External 3rd Party Systems, • Other Incident Management Systems, • Other Computer Aided Dispatch Systems (i.e. ICEMS), • ERP systems, • Geospatial Information Systems (such as Small World), • State emergency services, • Wayside Information Management System (for alarms), • TMC Incident Management Systems, • Train Location Systems / On Time Running (TLS-OTR), • Billing systems . For example information exchange patterns such as: • Bi-directional request & respond, • Pull, • Push. • Receiving incident records from 3rd part incident management systems. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	Incident information can be sent in real-time or based on defined events (e.g. closing/completing an incident), over a variety of channels or services, as specified in IMS-CAP-025. Specific interfaces allow a deeper integration into up- and downstream systems, i.e. CIMS, DTTS, TLS-OTR, FPe, FMBS, CE, Reliance Rail, IFMS, SRS, ERP, GIS, a business intelligence solution, WIMS and 3rd party solutions. See Chapter 8 - "Interfaces" of the document "Understand Requirements_FRQ.pdf" for a detailled interface description.
IMS-CAP-063	The ability to integrate with a day of operation timetabling system. For example: • Receive alerts when services are experiencing delays, • Receive transposition details (i.e. add stop, skipped stop, terminate, cancel run etc.) • Receive lists of services affected, • Provide estimated restoration / recovery times • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the DTTS allows the interchange of incident and alert information (including affected services and estimated restoration and recovery times) and transportation details (SIRI SX, PT and ET).
IMS-CAP-064	The ability to integrate with a Customer Information Management System. For example: • Provide cause impact and advice details, • Provide estimate recovery times. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the CIMS allows the interchange of incident information and recovery times (SIRI SX).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-065	The ability to integrate / display views on a large video display. For example: • Display dashboard type views, • Display GIS views, • Display location of response teams, • Display the location of a incident.	**E**	Out of The Box	It is possible to display the required information on a large video display. The product provides data for dashboard and GIS displays in real time and allows visualisation in a standard browser.
IMS-CAP-066	The ability to support the management of multiple incidents simultaneously. For example: • Different users working on different incidents, • Same users supporting different incidents.	**E**	Out of The Box	It is possible for different users to process different incidents. One user can open multiple incidents for processing at the same time. Multiple users can process a single incident at the same time. The product detects data conflicts and provides different mechanism for their resolution.
IMS-CAP-069	The ability for users to configure their own user preferences. For example: • Set up notifications of interest based on incident type, area of responsibility, • Set up method of notification, text, email etc., • Set up dashboard views. Note: Authorisation and Authentication is covered in the NFR's.	**E**	Out of The Box	Users can configure their personal notification rules and outbound channel in the client application. Personal dashboard views can be configured in the integrated 3rd party component as specified in IMS-CAP-079.
IMS-CAP-070	The ability to manually and automatically attribute further details to incident records. For example: • Who is responsible for root cause analysis, • Who the incident belongs to (Business unit, contract etc.), • Incident Delay Attribution (Late, very late, cancelled etc.), • Incident status (Open, Closed etc.), • Location of a incident, • Force majeure, • Attribution reporting, • Ability for attribution through mobile devices. Note: There are business rules (contractual timeframes) in which externals need to be informed of incident details.	**E**	Out of The Box	Further incident details can be manually or automatically (based on business rules) added to the incident description.
IMS-CAP-071	The ability to trigger viewing of specific CCTV cameras based on predefine alarms and business rules. For example: • Trigger CCTV cameras once a emergency help point has been activated (i.e. on set, on station, in lift etc.), • Trigger CCTV cameras on plats forms that are over crowded.	**E**	Out of The Box	The product is capable of catching alerts from CCTV cameras on predefined events and can display live and recorded video feeds.
IMS-CAP-072	The ability to assist users in managing / arranging alternative transport with 3rd party providers. For example: • Notification, • Booking, • Tracking progress (i.e. ETA), • Communicating with station staff. Note: This requirement is also covered under workflow requirements.	**D**	Out of The Box	3rd party providers for alternative transports can be tied to the product's responsibility model, allowing the user to access booking information or communication with station staff over various outbound channels, based on the incident location. Progress tracking can be assisted with a specific checklist.
IMS-CAP-073	The ability to provide users with visibility of pre-planned special events / track work. For example: • Easter show, • Carols in the domain, • Track work - daily summary reports, • Road, bus, ferry and light rail.	**E**	Configuration	The Administration Client allows the configuration of special events in advance. The User Client can display a list of upcoming events.
IMS-CAP-074	The ability to provide users with access to images, photos and documents to aid in the communication of incident details. For example: • GIS imagery, • Access to reference data, • Ability to edit imagery and distribute updates.	**E**	Configuration	The User Client allows the upload of unstructured data to a network drive folder for the specific incident (see IMS-CAP-056). It is possible to send incident details and file attachments to designated users or user groups. The GIS View provides the user with a toolset for drawing objects into the GIS view and publishing updates to other users.
IMS-CAP-076	The ability to manage (C,R,U,D) meta data for records within the system. For example: • Create, • Read, • Update, • Delete. Meta data examples: Location, Creator, Alarm Type etc.	**E**	Customisation	It is possible to manage meta data for incident records.
IMS-CAP-078	The ability to assist / prompt users to help in the diagnosis of the root cause of a incident / defect.	**E**	Out of The Box	The product aids the user in diagnosing the root cause of the incident. For example by: - checklist-based gathering and display of incident information - detailed information from interfaces to other incident management systems - correlating data from upstream or integrated systems (e.g. relevant assets, incident location details, weather information..) - display of alarm sources

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-079	The ability to manage (C,R,U,D) dashboard views that will be available to users. For example: • Create, • Read, • Update, • Delete. • Flexible filtering and data visualisation, • Shared views, • Views including GIS, • Views including internal and external incident information	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom dashboard views. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required dashboard views. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-080	The ability to provide users with the ability to access and view dashboards For example: • Access given to those who are within ROC, • Access provided via mobile device. • Information on a dashboard is real-time, • Tables, graphs, hot spots, GIS views etc.	**E**	3rd Party	The recommended 3rd party tool (see IMS-CAP-079) provides a browser based dashboard view which allows users to access and view dashboards on a broad range of devices, e.g. large video displays or mobile devices. The product provides those dashboards with real-time data.
IMS-CAP-081	The ability to view a incidents sequence of events in time order in either real-time or post incident. For example: • Real-time replay to help identify what actions have been activated, • Post event replay to learn and improve process and procedure	**E**	Customisation	The product's audit log enables a full reconstruction of the incident sequence. It is possible to provide a replay functionality for displaying the actions taken in the incident resolution.
IMS-CAP-082	The ability to manage (C,R,U,D) a contact management details. For example: • Telephone, email, mobile, address, • Provide access contact details for internal and external 3rd parties, • List of on call response staff. **Note:** This may require integration with existing legacy systems.	**E**	Out of The Box	The product's Administration Client allows management of contact details. The User Client can display corresponding response staff and allows the distribution of contact details.
IMS-CAP-083	The ability to simulate how a incident recovery may unfold. For example: • Based on actions assigned, • Based on historical information (provide improved estimated response / recovery times), • Based on feedback received from end users.	**I**	Customisation	It is possible to implement a rule set that allows a simulation of the actual incident resolution based on incident details (estimated response and recovery times and assigned actions).
IMS-CAP-084	The ability to view and monitor resource constraints. For example: • Monitor availability of resources, • Monitor shift start and end times, • Access competence levels. Note: This will be useful information prior to dispatching the relevant resources to assist in the recovery of a incident.	**E**	Out of The Box	The product is capable of displaying available response teams as outlined in IMS-CAP-028. Shift start and end times as well as competency levels of resources can be managed in the Administration Client
IMS-CAP-085	The ability for the system to dynamically learn and improve processes based on historic data. For example: • Ability to change activities based on timeframes, • Ability to suggest alterations to predefined support plans due to identified bottle necks.	**I**	Future	
IMS-CAP-086	The ability to capture incidents for existing incident management systems. i.e. Act as the single point in which all incident records are created. Note: It is envisaged that IMS will become the single point in which incident records are created. After which IMS will pass the incident records down to the existing incident management systems. For example: • IFMS, • SRS, • FMS.	**E**	Customisation	The product will integrate with the existing incident management systems for cross referencing incidents, sharing incident information or raising and closing incidents.

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
Accessibility			
NFR-ACC-001	The component/(s) shall be accessible via standards based browser environment or thin client, for example: • Remote Desktop Protocol (RDP) • Citrix	**E**	Out of the Box
NFR-ACC-002	The component/(s) shall be accessible remotely to 3rd parties, based on business rules and appropriate permission, for example: • Transport Management Centre • New South Wales Police Force	**I**	Out of the Box
NFR-ACC-003	The solution shall enable the dynamic reconfiguration of workstations to meet operational demand, interacting with the necessary infrastructure and telecoms systems to enable communications and control authorisation to move with a workstation.	**E**	Out of the Box
Auditability			
NFR-AUD-001	The solution shall provide the ability to tailor audit requirements by component. The audit logs shall contain at least the following security relevant information: • identification and authentication of users • date and time that the event occurred and was recorded • source system, device or application, e.g. IP address, application, or assigned name • type of action, for example include authorise, create, read, update, delete and accept network connection • before and after values when action involves updating a data element • any status, response or errors values generated as a result of the event or activity.	**E**	Out of the Box
NFR-AUD-002	The solution shall provide the ability to tailor audit requirements by component. The events to be recorded in activity and/or audit logs need to include but not necessarily be limited to: • start up and the stopping or shutdown of: o applications and databases o operating systems, including servers o infrastructure components such as firewalls, routers and switches • connection initiation, establishment and termination, including: o source and destination address o desired or requested service • information received from external interfaces as well as information dispatched to other systems • errors that occur in any infrastructure, operating system or application component • successful activities initiated by all individuals, whether authorised or not • changes to production systems and applications • relevant application and/or process/thread activity • creation, modifying, deleting and disabling or revoking of user permissions and access • records created by security systems such as anti-virus/malware tools, IDS/IPS (Intrusion Detection Systems / Intrusion Prevent Systems), firewalls and access/identity management tools	**E**	3rd Party
NFR-AUD-003	The solution shall ensure audit logs are stored and maintained in accordance with the relevant security classification level assigned to the log information, in an un-editable format based on date and/or other recorded audit details to be specified.	**E**	Out of the Box
NFR-AUD-004	The solution shall ensure the audit logs shall be stored in a device separate to the device or application that created the logs. This is to: • minimise the potential for deliberate corruption or unauthorised deletion of logs • permit the use of shared logging infrastructure, including integrity mechanisms, minimising cost overheads and chronologically synchronising logs • improve the ease of correlating events across applications, systems and infrastructure.	**E**	Out of the Box
NFR-AUD-005	The solution shall be designed and implemented to minimise the recording of sensitive or personal identifying information in logs and audit trails unless such detail is necessary for specific business or operational reasons.	**E**	Out of the Box
NFR-AUD-006	The solution shall provide functionality to interrogate audit logs and raise alerts on critical and suspicious activity.	**E**	Out of the Box
NFR-AUD-007	The solution shall provide the ability to restrict access to audit logs, to system and appropriately trusted application administration and support staff.	**E**	Out of the Box
NFR-AUD-008	The solution shall provide Auditors direct access to the audit system to view audit logs and/or the ability to export to a reporting engine.	**E**	Out of the Box
NFR-AUD-009	The solution shall record all access of audit logs. These log records in turn require protection as per NFR-AUD-003 to NFR-AUD-008	**E**	Out of the Box
NFR-AUD-010	The solution shall ensure logging facilities and log information are protected against tampering.	**E**	Out of the Box
NFR-AUD-011	The solution shall support variable retention policies for audit logs, dependent upon Sydney Trains Log Retention Policy "ICT-SGD-70107 Logging".	**E**	Out of the Box
Availability			
NFR-AV-003	The component/(s) shall ensure that the installation of patches / hot fixes etc do not require the system to be taken down or reboot.	**E**	Configuration
NFR-AV-004	The component/(s) shall seamlessly operate across multiple physical data centres.	**E**	Out of the Box
Interoperability			
NFR-IO-001	The component/(s) shall support the following transport data interchange standards: - GTF/GTFS-R - SIRI (v1.3 +)	**E**	Customisation
NFR-IO-002	The component/(s) shall support the extraction of data based on ETL standards.	**E**	Out of the Box
NFR-IO-003	The component/(s) shall support interfacing with email systems supporting SMTP.	**E**	Out of the Box
NFR-IO-004	The component/(s) shall be compatible with common desktop browsers, for example: • Internet Explorer (*note: v8.0 is currently deployed within Sydney Trains*) • Safari • Chrome • Firefox	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-IO-005	The component/(s) shall be compatible with common mobile browsers, for example: • iPhone/iPad • Android • Blackberry	**E**	Out of the Box
NFR-IO-006	The component/(s) clock shall be synchronised with the definitive master clock.	**E**	Out of the Box
Maintainability			
NFR-MNT-001	The component/(s) shall support Sydney Trains backup rotation requirements without the need to restrict end user access.	**E**	Out of the Box
NFR-MNT-004	The Disaster Recovery system shall ensure all audit logs are backed up on a regular basis.	**E**	Out of the Box
NFR-MNT-009	The component/(s) shall provide an automatic way of migrating the data of existing database in case of data structure change during transfer to new versions.	**E**	Out of the Box
NFR-MNT-010	The component/(s) shall provide the ability to revert to a previous release.	**E**	Out of the Box
NFR-MNT-011	The component/(s) shall ensure support activities can be completed remotely to reduce operational interruption.	**E**	Out of the Box
NFR-MNT-012	Maintenance task / service activities must be able to be completed without operational interruption.	**E**	Out of the Box
Manageability			
NFR-MGN-001	The component/(s) shall support systems management standards such as SNMP.	**E**	Out of the Box
NFR-MGN-002	Critical errors (e.g. back up failure) that occur within the component/(s) shall provide warning message to the system administrator (e.g. via SMS, email). These alarms must raise an incident within the Sydney Trains Incident Management System.	**E**	Out of the Box
Performance			
NFR-PER-001	The component/(s) shall provide a response time for all functions (e.g. application loading, screen open and refresh times) below 2 seconds under peak loads. All components should have a fit for purpose response time.	**E**	Out of the Box
NFR-PER-002	The component/(s) shall have the ability to not impact system performance while auditing and monitoring of usage.	**E**	Out of the Box
Portability			
NFR-PO-001	In the event of a requirement to apply a patch/upgrade, the component/(s) shall automatically port any customisation authorised by the application supplier.	**E**	Out of the Box
NFR-PO-002	The component/(s) shall support ease of migration to new technology (hardware or software) as and when it becomes available to the market.	**E**	Out of the Box
Reliability			
NFR-REL-001	The component/(s) shall provide the ability to retain all electronic files, at least until confirmation of a successful exchange / transfer process. This is a procedural safeguard, to ensure that records are not deleted before successful exchange / transfer is reported from the recipient.	**E**	Out of the Box
Reporting			
NFR-RPT-001	The component/(s) shall support standards based printers, formats, page sizes, for example: • A0 for zigzags.	**E**	Out of the Box
Scalability			
NFR-SCA-001	The component/(s) shall support simplicity of scaling options both horizontally and vertically, for example add more users to a node, add more nodes.	**E**	Out of the Box
Security			
NFR-SEC-001	The component/(s) shall support integration with Sydney Trains' Identity and Access Management component/(s) (Oracle) to perform authentication. Sydney Trains authentication process uses Single Sign On / Same Sign On standard (e.g. provide single sign on access to component/(s) once a user is logged on to the Sydney Trains network (via a Sydney Trains computer or a VPN). Content classified as 'Protected' will require the user to provide their user name and password to access it.	**E**	Configuration
NFR-SEC-002	The component/(s) shall support LDAP authentication.	**E**	Out of the Box
NFR-SEC-003	The component/(s) shall support that USER_ID's are only used to identify and reference users and not as proof of identity or authentication mechanism.	**E**	Out of the Box
NFR-SEC-004	The component/(s) shall support access control checks, if a web application, to access protected URL, must not be bypassable by a user that simply skips over the page with the security check.	**E**	Out of the Box
NFR-SEC-005	The component/(s) shall ensure, if a web application, administrator access through the front door of the site is not possible.	**E**	Out of the Box
NFR-SEC-006	The component/(s) shall provide the ability to apply a Segregation of Duties (SoD) matrix for roles and responsibilities, which is easily updated via an administrator user interface. This may include • access levels (role based, field level, category/content) • password requirements - length, special characters, expiry, recycling policies • inactivity timeouts – durations, actions • re-authentication after timeout.	**E**	Out of the Box
NFR-SEC-007	The component/(s) shall provide the ability to provide risk and SoD analysis at user, role, transaction, and authorisation object field value levels.	**I**	Customisation
NFR-SEC-008	The component/(s) shall provide the ability to simulate user role changes, in order to identify hidden risks at the user level, before the introduction of a user change.	**I**	Customisation
NFR-SEC-009	The component/(s) shall provide the ability to enable automation of identification of SoD conflicts at each user level, together with the ability to generate and distribute reports detailing SoD conflicts and mark those that have an approved exception.	**I**	Customisation
NFR-SEC-010	The component/(s) shall support a "change password" function, whereby users are required to provide both their old and new password when changing their password.	**E**	Out of the Box
NFR-SEC-011	The component/(s) shall ensure, if a web application, authentication and session data is not submitted as part of a GET, POST should always be used instead.	**E**	Out of the Box
NFR-SEC-012	The component/(s) shall provide the ability to automatically notify designated security administrators of unauthorized access or attempted access and record in a log with reporting.	**E**	Out of the Box
NFR-SEC-013	The component/(s) shall not indicate whether it was the username or password that was wrong if a login attempt fails.	**E**	Out of the Box
NFR-SEC-014	The component/(s) shall inform users, if a web application, of the date/time of their last successful login and the number of failed access attempts to their account since that time.	**E**	Out of the Box
NFR-SEC-015	The component/(s) shall ensure, if a web application, authentication pages are marked with all varieties of the no cache tag to prevent someone from using the back button in a user's browser to back up to the login page and resubmit the previously typed in credentials. Many browsers now support the "autocomplete=false" flag to prevent storing of credentials in autocomplete caches.	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-SEC-016	Remote access to the ROC components by third party users including Service Providers (e.g. remote system managers, developers. technical support etc.) can only be done by: • Corporate Virtual Private Network (F5-Firepass).	**E**	Out of the Box
NFR-SEC-017	The servers running ROC systems should be isolated on a separate network segments in order to prevent attackers from using them as a platform for mounting attacks on systems in other segments and vice versa.	**E**	Out of the Box
Usability			
NFR-USE-001	The component/(s) shall be designed to minimise cognitive load. Use of configurable audible alarms and visual stimulus must be designed to entice an appropriate response and to differentiate between critical and non-critical events (to be determined by business rules).	**E**	Out of the Box
NFR-USE-002	The component/(s) shall ensure alerts are distinctive, sufficiently loud (at least 5dB(A) above ambient noise level), of an appropriate frequency range (between 500Hz to 3000Hz) and shall not disturb or be confused with other operators alerts.	**E**	Out of the Box
NFR-USE-003	The component/(s) shall provide the ability to change character size, font, contrast and colour of displays to: • allow for the use of more or larger monitors • maximise viewing distance • reduce focal convergence for operators (related to eye strain) • reduce the impact on the operator of heat from monitors.	**E**	Configuration
NFR-USE-004	The component/(s) shall provide the ability for Administrators to perform configuration tasks without customisation and vendor support. These tasks may include: • maintain all value lists • maintain all field labels • maintain data filters • maintain workflows • maintain reports • hide/show and reorder columns • add data filters.	**E**	Configuration
NFR-USE-005	The component/(s) shall provide the ability for Administrations to add more fields to the data input screens for capturing additional business specific information without having to write any code. These fields shall be configured without creating additional tables or without the additional effort of referencing the new fields to the existing fields on the screen. The user shall also be able to define the data type and the data length of the additional fields without having to write any code.	**I**	Configuration
NFR-USE-006	The component/(s) shall have unified, easy, flexible and user friendly interface enabling, for example, the following settings: • personal user menu • personal user settings • field placement on screen • field composition on screen.	**E**	Customisation
NFR-USE-007	The component/(s) shall support multiple screen sizes and resolutions. Minimum display resolution shall be 1280x1024 pixels (design aim of 1600x1200).	**E**	Out of the Box
NFR-USE-008	The component/(s) shall not reduce workspace area if Branding were applied to that component.	**E**	Out of the Box
NFR-USE-009	The component/(s) shall provide online help which is contextual and target the Sydney Trains users.	**I**	Out of the Box
NFR-USE-010	The component/(s) shall ensure all user interfaces have an Australian locale, for example dates displayed in Australian format dd/mm/yyyy, dictionaries Australian, etc.	**E**	Out of the Box
NFR-USE-011	The component/(s) shall be consistent with common interface conventions and best practices, for example: • support minimal keystrokes/typing (e.g. provide reference data via drop down list opposed to free text fields) • quick, simple and user friendly	**E**	Out of the Box
NFR-USE-012	The component/(s) shall perform all functions with keyboard support (mouse is not mandatory).	**D**	Out of the Box
NFR-USE-013	All component/(s) shall be homogenous with respect to keyboard use, screen layout and menu operations with Graphic User Interface (GUI) support.	**D**	Out of the Box
NFR-USE-014	The component/(s) shall have facility to display confirmation / warning windows, for example deletes, changes.	**E**	Out of the Box
NFR-USE-015	The component/(s) shall be able to gracefully handle any feasible set of inputs, any errors that can be generated by internal components such as system calls, database queries, or any other internal functions. For example: • when errors occur, the site should respond with a specifically designed result that is helpful to the user without revealing unnecessary internal details • error messages must be produced in meaningful, plain English, and logged so that their cause can be reviewed.	**E**	Out of the Box
NFR-USE-016	The component/(s) shall include progress indicators while performing functions greater than 2 seconds.	**E**	Out of the Box

Appendix L – Draft Module 5

Module 5 Order Form
(19 August 2016).DC

MODULE ORDER FORM
MODULE 5 – SOFTWARE SUPPORT SERVICES

This is draft only and is not intended to be an executable form. The Parties shall negotiate, in good faith, the Support Services based on the documents provide in Attachment A. The items in mark-up are subject to further negotiation between the Parties.

Box 1 Designated Equipment

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.1)	
Specify the hardware platform/operating system combination upon which the Supported Software is installed. [Note: Specify the type and version number of the operating system and capacity/model of the Hardware.]	The hardware and operating system requirements are described in a. Release 1 Architecture Specification v5.0 in Appendix A – Initial Requirements; and b. The Release 1 Production Technology Infrastructure Design that is a Deliverable in the Build Phase of the PIPP. [***Note: These will need to be picked up in the PIPP***]

Box 2 Developed Software

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.2)	
Specify which of the following categories of software to which each of the items of Developed Software applies: (a) an adaptation, translation or derivative of the Licensed Software; or (b) software that has been newly created by the Contractor under Module 4, or any other Module; or [Note: For example "Payroll application developed under Module 4".] (c) other software, including software that is already owned by or licensed to the Customer or open source software. [Note: The definition of Developed Software does not include Licensed	REM 2016.R1 and REM Mobile 2016.R1 are an adaptation, translation or derivative of the Licensed Software and are therefore Developed Software for the purposes of this Module 5.

Software.]	

Box 3 Installed on Contractor Equipment

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.6)	
Specify if the Supported Software is to be installed on equipment which is owned or controlled by the Contractor.	Not applicable. Supported Software shall be installed on equipment owned by the Customer or on equipment owned by the Customer's outsourced infrastructure contractors.

Box 4 Prices of Software Support Services

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.13)	
Specify the fees payable for supplying the Software Support Services, and when they are due. [E.g. This may be on a monthly, quarterly or yearly basis or any other term that is agreed by parties.]	The Contractor shall pay an annual fee of [redacted] based on the Support proposal provided by the Contractor in their BAFO. *[Note: At the time of contracting, the Customer's precise support requirements are yet to be defined. The parties will negotiate and agree a support model and associated price prior to the Release 1 Licensed Software being used in the production environment. The price will be baselined against the attached suite of support documents and the Contractor's BAFO price. Rather than address this baselining here, Sydney Trains considers that it would be clearer to include this concept in the Additional Conditions.]* **Program Support** Fees commence when REM Release 1 goes live in the Production Environment and are payable by the Customer on AAD of Release 1. For the avoidance of doubt, any residual value of the annual fee for Program Support will be credited to Maintenance and Support if Program Support is less than 12 months. **Maintenance and Support** The Maintenance and Support term shall be 5 years from AAD of Release 3.

	The Parties acknowledge and agree that the Support Proposal reflects the Contractor's standard support offer [and that it does not necessarily align with the Customer's requirements or the scope and size of the Release 3 REM system.] The Parties will negotiate and agree a support model and associated price prior to the Release 1 Licensed Software being used in the production environment. The price will be baselined against the attached suite of support documents and the Contractor's BAFO price. The suite of documents in Attachment B to this Module 5 Order Form represents the basis for these negotiations.

Box 5 Period of Software Support Services

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Support Period (clause 2.2)	
Specify the Contract Period during which the Software Support Services will be provided. If this Box is not completed and the Contract Period is not specified on the General Order Form, the Software Support Services will be deemed to start on the AAD of the relevant Supported Software, and continue until terminated by either Party giving the other 30 days Notice in Writing.	The Contract Period for the Software Support Services will be: (a) Program Support (as defined in the PIPP) commences when Release 1 goes live in the Production Environment and concludes when Release 3 goes live in the Production Environment. (b) The Maintenance and Support Period commences when Release 3 goes live in the Production Environment. The initial term for Maintenance and Support is 5 years and subject to extension by mutual agreement.

Box 6 Extension of Contract Notification

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Support Period (clause 2.3)	
Specify (a) the number of days written notice prior to the end of each current Contract Period that the Contractor must give of the Price; (b) payment arrangements; (c) whether the Contract Period will be	The Customer must give the Contractor 90 days' notice of its intention to extend the Support Period. The parties will negotiate the updated Contract Price in good faith in order to extend the Contract Period under this Customer Contract. *[Note: As per comment above. Mechanism to be confirmed]*

extended under this Customer Contract, or whether a new Customer Contract will be entered into, after the end of the current Contract Period. If no period is specified in this Box, the period is 30 days.	

Box 7 Details of Software Support Services

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Scope (clause 3.1)	
Specify the details of Software Support Services, including: (a) the Contract Period [Note: the default period is 12 months from AAD]; (b) the Supported Software that is to be the subject of the Software Support Services, being: (i) Licensed Software; (ii) details of any Developed Software; (c) whether the Licensed Software is a First Release, or whether the First Release of New Release of any Licensed Software will be provided as part of the Software Support Services; (d) the details relating to any of the following Services that the Contractor is to provide: (i) Help Desk Services, including the hours of operation; (ii) whether the Customer is entitled to receive Updates and/or New Releases if and when they become available from the Contractor during the Contract Period, for: (A) the Licensed Software: (B) any Developed	(a) The Contract Period for the Software Support Services is as described in Box 5 above. (b) The Supported Software is the Licensed Software and any associated Developed Software. (c) The Licensed Software is not a First Release. (d) The parties shall negotiate Maintenance and Support prior to the Release 1 AAD. Negotiations for Support shall be based on the following documents at Attachment B to this Order Form: (i) 'Attachment A_Support Plan' outlining Service Level Definitions; (ii) Customer Support Level Requirements; and (iii) Draft Annexure C to the General Order Form _Service Level Agreement *[Note: As per notes above, to be confirmed where the content directly above and below will sit. This appears to relate to the baselining of the services.]* Help Desk Services during the Program Maintenance and Support period shall be delivered as set out below: *[Note: Is this model described in any of the documentation? Is it reflected in the baseline support documents?]*

Software; (iii) any ancillary services; (e) any applicable Service Levels; (f) the particulars of any access to the Site and the Supported Software, including VPN access to the Supported Software required by the Contractor to effectively perform the Software Support Services; (g) the Price and any expenses or other charges that apply for each Service. [Note: Each of the items above should be fully detailed in this Box. The version numbers of each item of Support Software should be included. If the Software Support Services are described in another document, such as the Contractor's Software Support polices, this document should be cross-referenced in this Box.]	(i) First tier support: First tier support will be provided by the Customer's existing IT infrastructure contractor for initial diagnostics; (ii) Second tier support: diagnostics and resolution will be performed by the Contractor trained Customer officer. The details of this training is specified in the PIPP; and (iii) Third tier support: If unable to be remediated or diagnosed, the [issue][Incident] will be escalated to the Contactor's software support team. Only Software Functional Errors can be escalated to third tier support. ***[Note: Sydney Trains to confirm]*** The Contractor shall maintain a 24x7 helpdesk service for third tier support. (e) The Customer is entitled to receive Updates of the Licensed Software during the Program Support and Maintenance and Support Phases. (f) The Customer must provide a VPN in order that the Contractor can access the system. (g) If the Customer escalates an Incident to the Contractor that is not a Defect , the Customer shall be charged for the efforts rendered by the Contractor or the efforts deducted from the Support Pool.

Box 8 Period of Support for each Release

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Updates and New Releases **(clause 3.20(b))**	
Specify the period for which the Contractor will continue to offer standard support for each release.	The Contractors release cycle for New Releases of the Licensed Software is every 6 months.

	The Contractor shall provide Support on an n-2 basis whereby the current version of the Licensed Software used in the Product Environment is "n" and the minus 2 represents the 2 earlier versions. Support ceases if the Customer has not elected to receive at least 1 of the subsequent 3 release of the Licensed Software. For the avoidance of doubt, the support period of a standard release resets when a New Release is installed in the Production Environment.
If this Box is not completed the period is 18 months from the date of general Release of the New Release.	

Box 9 Transition out Services

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Scope (clause 3.14)	
Specify if transition out services are to be provided.	Transition out services are to be provided in accordance with clause 43 of the Additional Conditions.
Specify the details of the transition out services, dates, Price for such transition out services, and when payment is due.	Per clause 43.2 of the Additional Conditions, these details will be set out in the Transition Out Plan to be negotiated by the Parties.

Box 10 Business Models of the Reseller

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Reseller Provision of Software Support Services (clause 4.1)	
Are any of the Deliverables being provided by the Contractor in the capacity as a Reseller? If yes: (a) specify if the Software Support Services are supplied by the Contractor who is acting as Reseller as Facilitator. [Note: Reseller as Facilitator means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 4.1(a).]	Not Applicable. None of the Deliverables are being provided by the Contractor in the capacity as a Reseller.

OR	
(b) specify if the Software Support Services are supplied by the Contractor who is acting as Reseller with Pass Through Warranties. [Note: Reseller with Pass Through Warranties means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 4.1(b).]	

Box 11 Value Add Services

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Acquisition through a Reseller (clause 4.3)	
Specify if the details of any value add services the Contractor is to provide, the Prices and when payment is due.	Not Applicable.

Box 12 Ancillary Services

Details to be included from Module 5	Order Details agreed by the Contractor and the Customer
Ancillary Services (clause 5.1)	
Specify if other services are to be provided during the Contract Period.	Not Applicable.
Specify the details of these other services, the Prices and when payment is due. [E.g. Ancillary services may include the consulting services needed to implement Updates or New Releases or training services.]	Not Applicable.

Attachment A

Add document referenced in box 1

Support Base Line

The follow represents the base line for support negotiations to be conducted by the Parties during the Build phase of Release 1. The Parties acknowledge that support charges incorporated in this Module 5 reflect the Contractor's support offering provided in the BAFO and detailed in document titled Attachment A_Support Plan.docx. Any change to the support offering may result in a change in pricing.

Attachment A_Support_Plan.docx

Customer Support Level Requirements.c

Annexure C to the General Order Form_

1.1.1 Level 1 Support

- Takes requests from end users.
- Responds to user requests
- Collects Error reports and ensures required information about reported Errors are collected.
- Forwards Errors to Level 2 Support

1.1.2 Level 2 Support

- Understands the application, performs the first Error analysis and checks whether the reported Error actually exists.
- Level 2 will coordinate errors by IT-operational means eg.
    - restarting client or server software
    - switching to fail-over environment
    - reinstalling client software etc.
- If an Error report does not contain the required pieces of information, the Error is rejected back to the Level 1 Support.
- Solves operational or configuration Errors.
- Checks whether Errors are caused by the operational environment (e.g. 3rd party systems)
    - Forwards Errors caused by the operational environment, user requests or software Errors to the corresponding responsible staff or organisations.
- The Level 2 Support has detailed technical knowledge about all application relevant components.
- The Level 2 Support follows up with user on Error reports that do not relate to the application or do not contain the required Error information.
- The Level 2 Support analyses the Error, identifies which application component caused the Error, and handles Errors that do not require software changes. If possible, the 2nd Level Support fixes the Error or provides a Workaround.
- The Level 2 Support forwards Errors that require software changes to the Level 3 Support of the respective software vendor.
- The Level 2 Support supports the Level 3 Support by gathering additional information required by Level 3 Support. This comprises all possible activities to be done on-site, like inspecting systems, user workstations etc.
- Ensures that only Errors that cannot be resolved by Level 2 Support are forwarded to Level 3 Support.

1.1.3 Level 3 Support

- The Level 3 support provides emergency triage on-call support.
- The Level 3 Support is the Support provided by the corresponding Software vendor.
- The Level 3 Support deals with Errors that cannot be dealt with by Level 2 Support because software changes are required.
- The Level 3 Support rejects Error reports that do not relate to software provided by the vendor, do not contain the required Error information or do not require software changes.The Level 3 Support handles Errors or provides Workarounds.
- The Level 3 Support is a remote only support that uses the service of Level 2 Support for required on-site activities.

ANNEXURE C TO THE GENERAL ORDER FORM

SERVICE LEVEL AGREEMENT (SLA)

Additional Conditions will be required to ensure that the Customer Contract aligns with the particular engagement, see item 43 of the General Order Form.]

1. Definitions and Interpretation

1.1 In this document, unless the contrary intention appears:

"**Business as Usual Stage**" mean the period commencing on the date on which Cutover is completed and ending on the date which is the end of the Contract Period.

"**Cutover**" has the meaning given to that term in the Initial PIPP.

"**Emergency Change**" has the meaning given to that term in the Recurring Services Schedule.

"**Formal Fix**" has the meaning given to that term in the Recurring Services Scope.

"**Governance Procedures**" means the governance procedures specified in this Customer Contract.

"**Hour**" means each period of 60 Minutes.

"**Hours of Operation**" means:

(a) during the Production Period, 24 hours a day, 7 days a week.

"**IMS**" has the meaning given to that term in the Initial PIPP.

"**Initial PIPP**" means the PIPP set out in Annexure A to the General Order Form as updated from time to time in accordance with the processes in that PIPP or otherwise in accordance with this Customer Contract.

"**Incident**" means an event which is not part of the standard operation of the Solution and which causes, or may cause, an interruption to access to, or a reduction in the performance of, the Solution (including a Defect in the Solution).

"**Measurement Period**" for a Service Level means the measurement period for that particular Service Level as specified in clause 4.

"**Minute**" means each period of 60 seconds in the Hours of Operation.

"**Notification Time**" for an Incident means the time at which an Incident is reported to, detected or recorded by, the Contractor.

"**Patch**" has the meaning given to that term in the Recurring Services Scope.

"**Problem**" means the underlying cause or causes of one or more Incidents.

"**Quarter**" means each period of 3 consecutive calendar months commencing on the first day of the first month after [the date on which this SLA commences].

"**Problem Resolution Plan**" means a plan which sets out the steps for, and timeframes for, Resolving a Problem, developed by the Contractor in accordance with the Recurring Services Scope and approved by the Customer.

"**Production Period**" means the period commencing on the date on which Release 1 goes live ~~the Simulation Period ends~~ and ending on the date on which the Business as Usual Stage ends.

"**Recurring Services Scope**" means the document setting out the scope of Recurring Services that the Contractor must supply under this Customer Contract set out in Annexure B to the General Order Form forming this Customer Contract as updated from time to time in accordance with the processes in the Initial PIPP or otherwise in accordance with the Customer Contract. [Note to Contractor: this document will be prepared based on the scope set out in the Statement of Requirements. This document may be refined during the project.]

"**Release**" has the meaning given to that term in the Recurring Services Scope.

"**Resolve**" means to provide a Workaround, an Emergency Change or Patch or a Release or Formal Fix (as applicable) and **Resolution** and **Resolved** have corresponding meanings.

"**Respond**" means the Contractor commences the required actions to address an Incident and **Response** and **Responded** have corresponding meanings.

"**Service Credits**" means the performance related liquidated damages specified in clause 4 for a Service Level Failure.

"**Service Improvement Plan**" means a plan prepared in accordance with clause 7.

"**Service Level Failure**" means a failure by the Contractor to meet or exceed a Service Level.

"**Service Request**" has the meaning given to that term in the Recurring Services Scope.

"**Severity 1 Incident**" means an Incident that:

(a) affects a group of users such that they are unable to perform the relevant aspects of their role;

(b) causes serious disruption to a group of users, corporate revenue or an ability to meet important deadlines;

(c) impacts, or potentially impacts, the customers of the Customer or the brand and reputation of the Customer; or

(d) otherwise causes a material adverse impact on the Customer's business operations.

"S**everity 2 Incident**" means an Incident that is not a Severity 1 Incident and that:

(a) affects a group of users such that they cannot work as they normally do, but they are capable of performing their role in an alternative manner;

(b) may cause a Severity 1 Incident if it is not Resolved; or

(c) causes a system function of the Solution to be unavailable to multiple users or impacts the recovery of all or any component of the Solution.

"S**everity 3 Incident**" means an Incident that is not a Severity 1 Incident or a Severity 2 Incident and that disrupts a single user or a small group of users but does not impact the Customer's businesses or has minor financial consequences.

"**Severity 4 Incident**" means an Incident that is not a Severity 1 Incident, Severity 2 Incident or Severity 3 Incident.

"**SLA**" means this document including its all of its attachments and any documents incorporated by reference.

"**Solution**" means the solution consisting of IMS, all Developed Software and all Updates and New Releases of those items, as updated from time to time.

1.2 Other capitalised words and expressions used in this SLA are defined in Part 3.

2. General

PURPOSE OF SLA

2.1 This SLA sets out:

(a) the Service Levels that apply to the Recurring Services set out in the Recurring Services Scope;

(b) how those Service Levels will be measured and over what periods; and

(c) the remedies that apply if the Contractor fails to meet those Service Levels.

2.2 The Customer expects to develop a long-term business relationship with the Contractor that is proactive, fair, open and honest and is supported by a commitment to superior performance in the provision of the Recurring Services set out in the Recurring Services Scope.

2.3 The Contractor's performance will be measured using Service Levels that fall into the following categories:

(a) operational metrics; and

(b) Customer satisfaction.

2.4 The Contractor must cooperate and work with the Customer and any third party suppliers to the Customer to the extent that:

(a) the Customer's, or third party supplier's, input is required for the Contractor to meet the Service Levels; and

(b) the Contractor's input is required for the Customer, or one or more third party suppliers, to meet any Service Levels applicable to them.

REVIEW OF SLA

2.5 This SLA will be reviewed once every 6 months after the commencement of the Business as Usual Stage (each a **SLA Review**). The first SLA Review will occur on the date which is 6 months after the commencement of the Business as Usual Stage.

2.6 This SLA:

(a) will be refined, updated and replace in accordance with, and at the times specified in, the

Initial PIPP; and

(b) in accordance with clauses 6.18, 26.1 and 26.2 of this Customer Contract, to reflect the any changes required by the Customer as a result of any SLA Review.

3. Primary obligations and remedies

OBLIGATION TO MEET OR EXCEED SERVICE LEVELS

3.1 The Contractor must meet or exceed the Service Levels.

3.2 The Contractor must ensure that no more than [insert] Service Level Failures occur in any [insert period].

SERVICE CREDITS

3.3 If:

(a) the Contractor fails to meet a Service Level; and

(b) clause 4 states that Service Credits apply to that Service Level Failure,

the Contractor must credit or pay to the Customer those Service Credits in accordance with clause 6.6.

SERVICE IMPROVEMENT PLAN

3.4 If:

(a) the trend of the Contractor's performance as set out in the [insert name of the report] shows a decline in its performance against a Service Level over 2 consecutive reporting periods;

(b) the same Service Level Failure occurs in 2 consecutive Measurement Periods; or

(c) the Contractor fails to meet the Service Level set out in clause **Error! Reference source not found.**~~4.12~~,

the Contractor must prepare, submit to the Customer, and once approved by the Customer implement, a Service Improvement Plan in accordance with clause 7.

4. Service Levels

RELIABILITY

4.1 The following Service Levels will apply during the Production Period:

Reliability	
Service Level	No more than 1 Severity 1 Incident or Severity 2 Incident occurs in any Quarter.
Measurement Period	Quarterly.

Reliability	
Service Credits	Service Credits will apply to this Service Level during the Production Period. The amount of the Service Credits is SC5 as set out in clause 6.1.

INCIDENT RESPONSE

4.2 The following Service Levels will apply during the Production Period:

Incident Response during the Production Period				
Service Level	Severity 1 Incidents Service Level	Severity 2 Incidents Service Level	Severity 3 Incidents Service Level	Severity 4 Incidents Service Level
	All Severity 1 Incidents Responded to within 30 Minutes after the Notification Time.	All Severity 2 Incidents Responded to within 30 Minutes after the Notification Time.	All Severity 3 Incidents Responded to within 4 Hours after the Notification Time.	All Severity 4 Incidents Responded to within 8 Hours after the Notification Time.
Measurement Period	Monthly.			
Service Credits	The amount of the Service Credits is SC2 as set out in clause 6.1. A Service Level Failure will occur each time the Contractor fails to meet any of the individual Service Levels set out in this table. The Contractor must pay a Service Credit for each Service Level Failure. For example, if the Contractor fails to meet a Severity 1 Incident Service Level and a Severity 2 Incident Level in any one Measurement Period, the Service Credit will be 4% of [the Price for the Recurring Services set out in the Recurring Services Scope] during the applicable Measurement Period (ie. 2 x SC2 (ie. 2%).			

INCIDENT RESOLUTION

4.4 The following Service Levels will apply during the Production Period:

Incident Resolution during the Production Period				
Service Level	Severity 1 Incidents Service Levels	Severity 2 Incidents Service Levels	Severity 3 Incidents Service Levels	Severity 4 Incidents Service Levels
	All Severity 1 Incidents were Resolved by either:	All Severity 2 Incidents were Resolved by either:	All Severity 3 Incidents were Resolved by either:	All Severity 4 Incidents were Resolved by either:

Incident Resolution during the Production Period				
	• a Workaround; • an Emergency Change or a Patch; or • a Release or Formal Fix, within 4 Hours after the Notification Time.	• a Workaround; • an Emergency Change or a Patch; or • a Release or Formal Fix, within 8 Hours after the Notification Time.	• a Workaround; • an Emergency Change or a Patch; or • a Release or Formal Fix, within 5 days after the Notification Time.	• a Workaround; • an Emergency Change or a Patch; or • a Release or Formal Fix, within the timeframe approved by the Customer in accordance with the Recurring Services Scope.
	All Severity 1 Incidents were Resolved by either: • an Emergency Change or a Patch; or • a Release or Formal Fix, within 1 day after the Notification Time.	All Severity 2 Incidents were Resolved by either: • an Emergency Change or a Patch; or • a Release or Formal Fix, within 2 days after the Notification Time.	All Severity 3 Incidents were Resolved by either: • an Emergency Change or a Patch; or • a Release or Formal Fix, within 30 days after the Notification Time.	All Severity 4 Incidents were Resolved by either: • an Emergency Change or a Patch; or • a Release or Formal Fix, within the timeframe approved by the Customer in accordance with the Recurring Services Scope.
	All Severity 1 Incidents were Resolved by Release or Formal Fix within 1 day after the Notification Time.	All Severity 2 Incidents were Resolved by Release or Formal Fix within 2 days after the Notification Time.	All Severity 2 Incidents were Resolved by Release or Formal Fix within 30 days after the Notification Time.	All Severity 4 Incidents were Resolved by Release or Formal Fix within the timeframe approved by the Customer in accordance with the Recurring Services Scope.
Measurement	Monthly.			

Incident Resolution during the Production Period	
Period	
Service Credits	The amount of the Service Credits is SC2 as set out in clause 6.1. A Service Level Failure will occur each time the Contractor fails to meet any of the individual Service Levels set out in this table. The Contractor must pay a Service Credit for each Service Level Failure. For example, if the Contractor fails to meet a Severity 1 Incident Service Level, and a Severity 2 Incident Service Level in any one Measurement Period, the Service Credit payable would be 4% of the Price for [the Recurring Services set out in the Recurring Services Scope] during the applicable Measurement Period (ie. 2 x SC2 (ie.2%)).

PROBLEM RESOLUTION

4.5 The following Service Levels will apply during the Production Period:

Problem Resolution	
Service Level	The Contractor must Resolve all Problems within the timeframe specified in the Problem Resolution Plan for that Problem.
Measurement Period	Monthly.
Service Credits	Service Credits will apply to this Service Level during Production Period. The amount of the Service Credits is SC2 as set out in clause 6.1.

ROOT CAUSE ANALYSIS AND IMPACT ASSESSMENT

4.6 The following Service Levels will apply during the Production Period:

Root Cause Analysis and Impact Assessments	
Service Level	The Contractor must ensure that: • it performs a root cause analysis and impact assessment in accordance with, and at the times specified in, the Recurring Services Scope for all Incidents and Problems; and • all root cause analysis and impact assessments conducted by the Contractor are accurate.
Measurement Period	Monthly.
Service Credits	Service Credits do not apply to this Service Level.

REPORTING SERVICE LEVELS

4.7 The following Service Levels will apply during and the Production Period:

Reporting	
Service Level	The Contractor must supply: • greater than or equal to 91% of the reports that it is obliged to within the timeframes specified for those reports in this Customer Contract; and • 100% within 48 hours after the due date for those reports.
Measurement Period	Monthly.
Service Credits	Service Credits will apply to this Service Level during the Production Period. The amount of the Service Credits is SC2 as set out in clause 6.1.

5. Measurement, reporting and performance review

MEASUREMENT

5.1 The Contractor must measure its performance against each Service Level.

5.2 Subject to clause 5.3, the Contractor must implement and maintain measuring and monitoring tools, methodologies and procedures that:

(a) are capable of measuring the Contractor's performance against the Service Levels;

(a) permit reporting at a level of detail required by this Customer Contract and otherwise sufficient to determine compliance with the Service Levels;

(b) meet any requirements specified by the Customer; and

(c) are approved by the Customer in writing.

5.3 Clauses 5.1 and 5.2 do not apply to the Service Level set out in clause **Error! Reference source not found.**~~4.12~~.

REPORTING

5.4 The Contractor must provide the reports relating to the Service Levels containing the content and covering the period, specified in the Governance Procedures, including the calculation of Service Credits that have accrued in the period.

5.5 The Contractor must deliver the reports to the Customer by the 7th Business Day after the end of the reporting period to which the report relates.

PERFORMANCE REVIEW

5.6 The Parties must review the Contractor's performance against the Service Levels at the times, and in the manner, specified in the Governance Procedures.

6. Service Credits

AMOUNTS

6.1 The amounts of Service Credits that apply to a particular Service Level are set out in the following matrix:

[Note to Tenderers: pricing provided by Tenderers must separately identify the prices for the Recurring Services in all applicable Stages.]

Service Credit Matrix	
SC1	1% of the Price for the [Recurring Services set out in the Recurring Services Scope] during the applicable Measurement Period.
SC2	2% of the Price for the [Recurring Services set out in the Recurring Services Scope] during the applicable Measurement Period.
SC3	4% of the Price for the [Recurring Services set out in the Recurring Services Scope] during the applicable Measurement Period.
SC4	6% of the Price for the [Recurring Services set out in the Recurring Services Scope] during the applicable Measurement Period.
SC5	8% of the Price for the [Recurring Services set out in the Recurring Services Scope] during the applicable Measurement Period.

CALCULATION

6.2 The Service Levels to which Service Credits relate, the amount of Service Credits payable and the circumstances in which they are payable are specified in clauses 4 and 6.1.

6.3 At the end of each Quarter the Contractor must calculate the amount of any Service Credits that accrued in that Quarter.

6.4 The Contractor's total liability for Service Credits in any Quarter will be the sum of all Service Credits that are payable for Service Level Failures in that Quarter up to a maximum 15% of the Price for [the Recurring Services set out in the Recurring Services Scope] for that Quarter.

NOTIFICATION

6.5 The Contractor must give the Customer Notice in Writing setting out the Service Credits that have accrued in a Quarter on or before the 7th Business Day of the Quarter following the Quarter in which those Service Credits accrued. [Note to Tenderers: once the scope of reporting has been finalised a separate notice may not be required.]

APPLICATION

6.6 The Contractor must apply the Service Credits against the next Tax Invoice given to the Customer by the Contractor after the Quarter in which Service Credits accrued. To the extent that the value of the Service Credits is greater than the value of the next Tax Invoice, the Contractor must apply the Service Credits against each subsequent Tax Invoice until the Service Credits have been fully applied.

6.7 If any Service Credits have accrued but not been fully applied as at the date on which this Customer Contract terminates or expires (**Unapplied Amount**) then:

(a) all Unapplied Amounts will immediately become a debt due to the Customer; and

(b) the Contractor must pay to the Customer within 30 Business Days of that date, the cash equivalent of all Unapplied Amounts.

GENERAL PROVISIONS RELATING TO SERVICE CREDITS

6.8 The Service Credits specified in this SLA are not a penalty.

6.9 The payment of Service Credits does not waive, limit, prejudice or otherwise affect any other rights or remedies the Customer may have under this Customer Contract or at law relating to the act or omission of the Contractor giving rise to those events, including the Customer's rights to terminate this Customer Contract in whole or in part or to claim or recover any losses, damages, liabilities costs or expenses.

7. Service Improvement Plans

APPLICATION

7.1 This clause 7 applies in the circumstances set out in clause 3.4.

SERVICE IMPROVEMENT PLAN

7.2 A Service Improvement Plan must specify:

(a) the process for identifying, and where applicable must identify, the Problem or other cause of the Service Level Failure or Service Level Failures that triggered the requirement for the Service Improvement Plan (**Relevant Service Level Failure**);

(b) if the Relevant Service Level Failure can be remedied, the actions that will be taken by the Contractor to implement that remedy;

(c) the actions that will be taken by the Contractor to prevent the same or a substantially similar Service Level Failure from occurring in the future;

(d) a timeline for the implementation of the Service Improvement Plan; and

(e) any other content reasonably required by the Customer.

7.3 If the Contractor is required to prepare and submit to the Customer a Service Improvement Plan under this SLA, the Contractor must prepare and submit a draft Service Improvement Plan to the Customer within 5 Business Day after the Relevant Service Level Failure (or a longer timeframe as agreed between the Parties in writing).

7.4 The Contractor must make any changes to the draft Service Improvement Plan required by the Customer (acting reasonably).

7.5 Once the Customer approves a Service Improvement Plan the Contractor must implement that Service Improvement Plan in accordance with the timeframes and other terms of that Service Improvement Plan at no cost to the Customer.

8. Notification and escalation

NOTIFICATION PROCEDURE

8.1 The Contractor must notify the Customer of any Service Level Failures in accordance with, and at the times, specified in the applicable Governance Procedures.

8.2 The Customer may notify the Contractor of any Service Level Failures, or other problems with the Contractor's performance in accordance with the applicable Governance Procedures.

ESCALATION PROCEDURE

8.3 The Contractor must escalate Service Level Failures or other problems with the Contractor's performance in accordance with the escalation procedure specified in the applicable Governance Procedures.

8.4 The Customer may escalate Service Level Failures or other problems with the Contractor's performance in accordance with the escalation procedure specified in the applicable Governance Procedures.

9. Changes to Service Levels and Service Credits

9.1 From time to time the Customer may, in accordance with clause 5.3 of the Customer Contract, request changes to the Service Levels and Service Credits (including by adding, changing or deleting existing Service Levels and Service Credits) specified in this SLA by giving the Contractor a Change Request in accordance with the variation procedures set out in Schedule 4 – Variation Procedures (**Service Level Change Request**).

9.2 The Contractor must sign a Service Level Change Request unless:

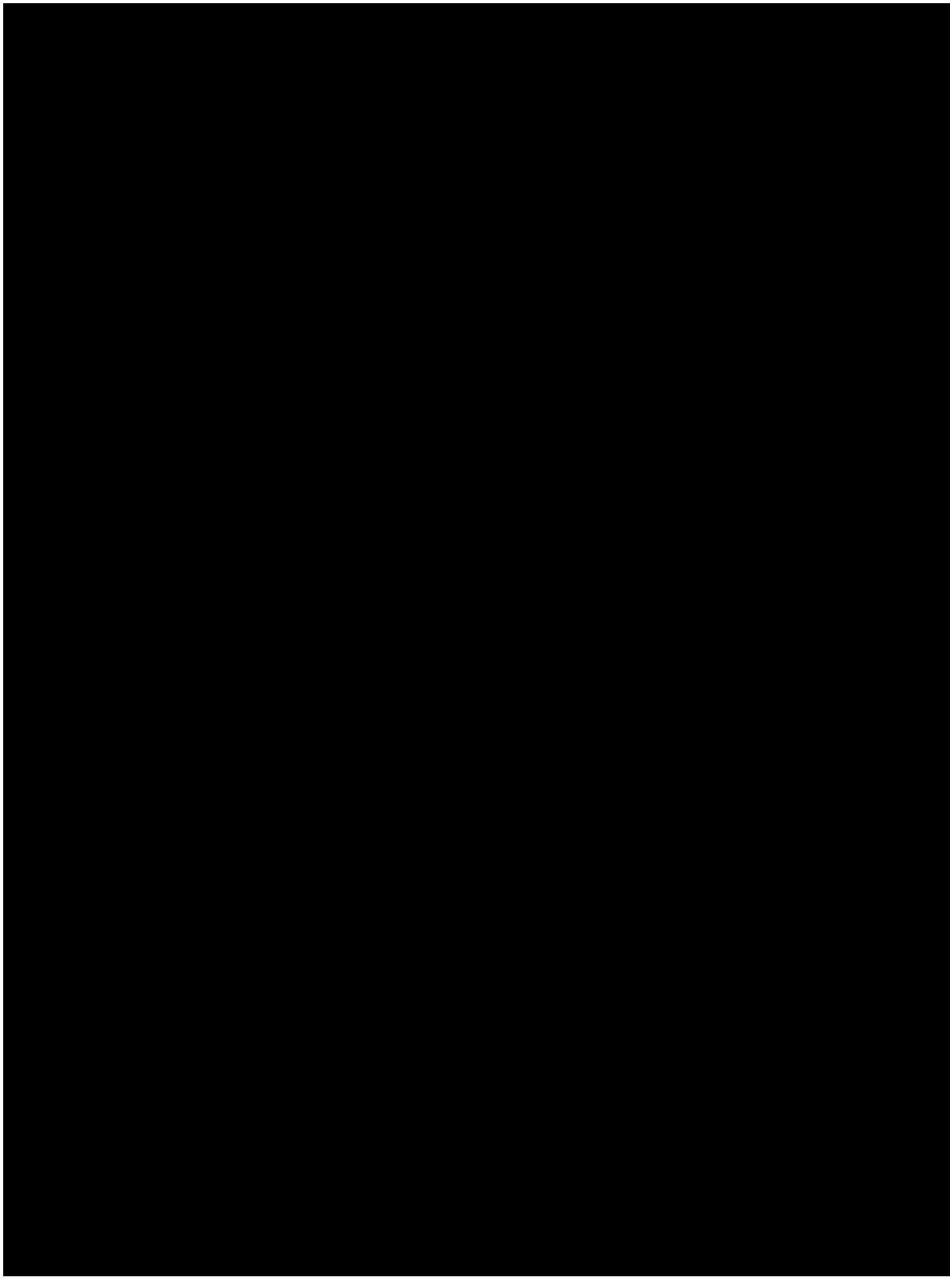
(a) either of the following apply:

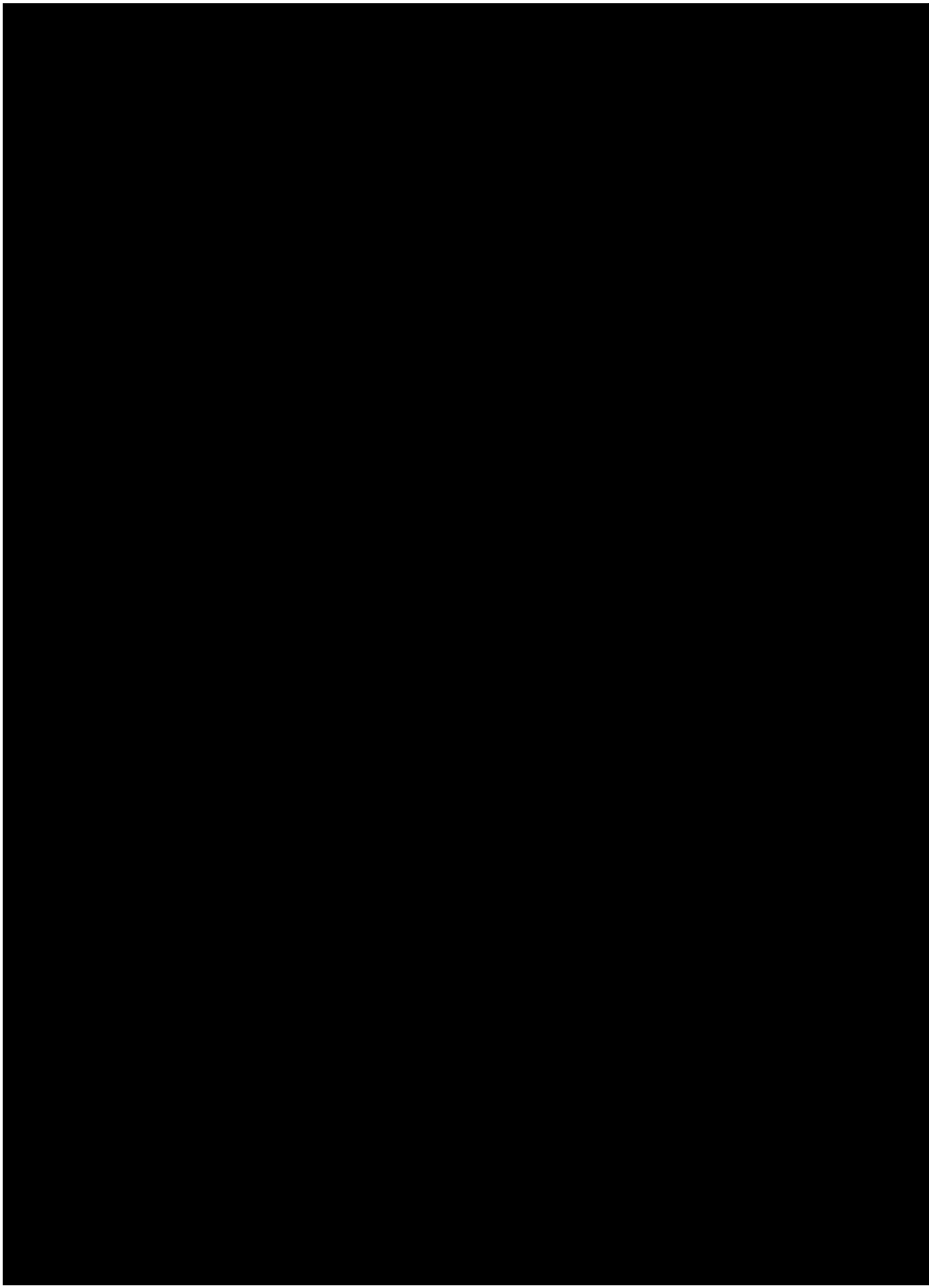
(i) the Service Level Change Request changes the Service Levels and compliance with that change would cause the Contractor to incur material additional costs in performing its obligations under this Customer Contract; or

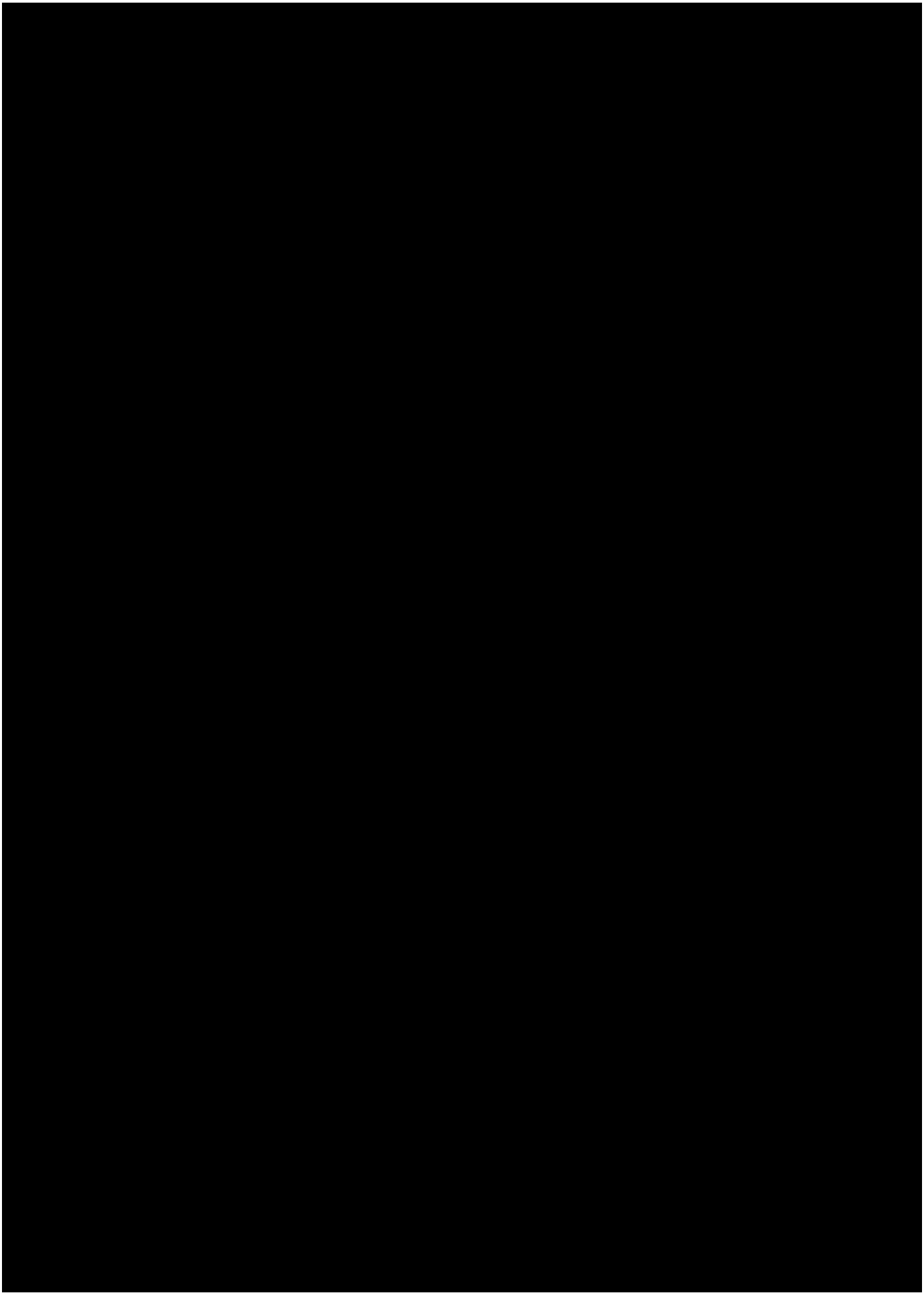
(ii) the Service Level Change Request changes the Service Credits in such a manner that would materially increase the Contractor's liability to pay, or exposure to liability to pay, Service Credits under this SLA; and

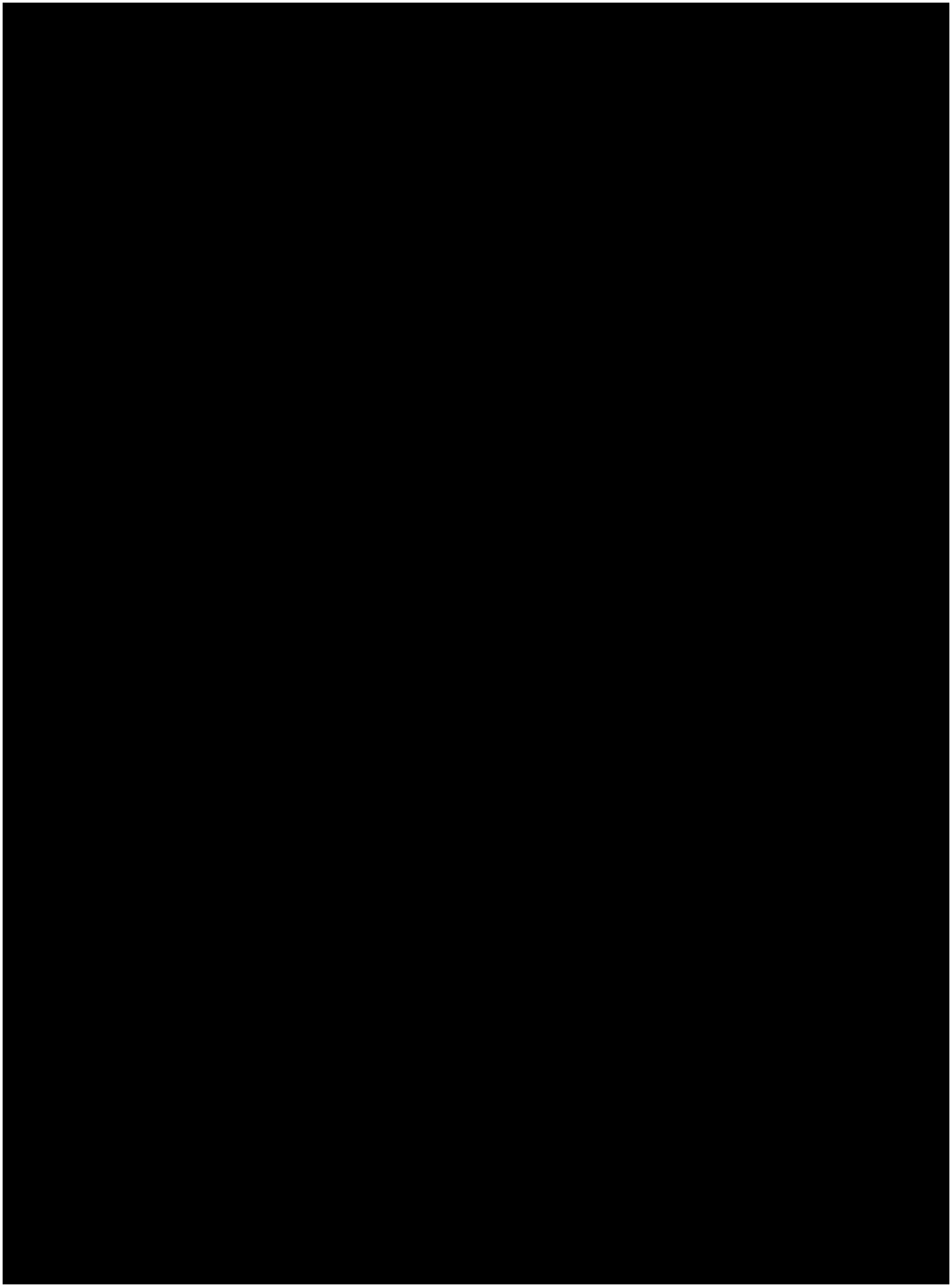
(b) the Contractor has given the Customer a Notice in Writing of that fact within the timeframe specified in clause 1.3 of Schedule 4 – Variation Procedures.

9.3 If the Contractor is not obliged to sign a Service Level Change Request under clause 9.2, the Contractor must negotiate in good faith with the Customer to agree changes to the Customer Contract necessary to implement the changes proposed in the Service Level Change Request.









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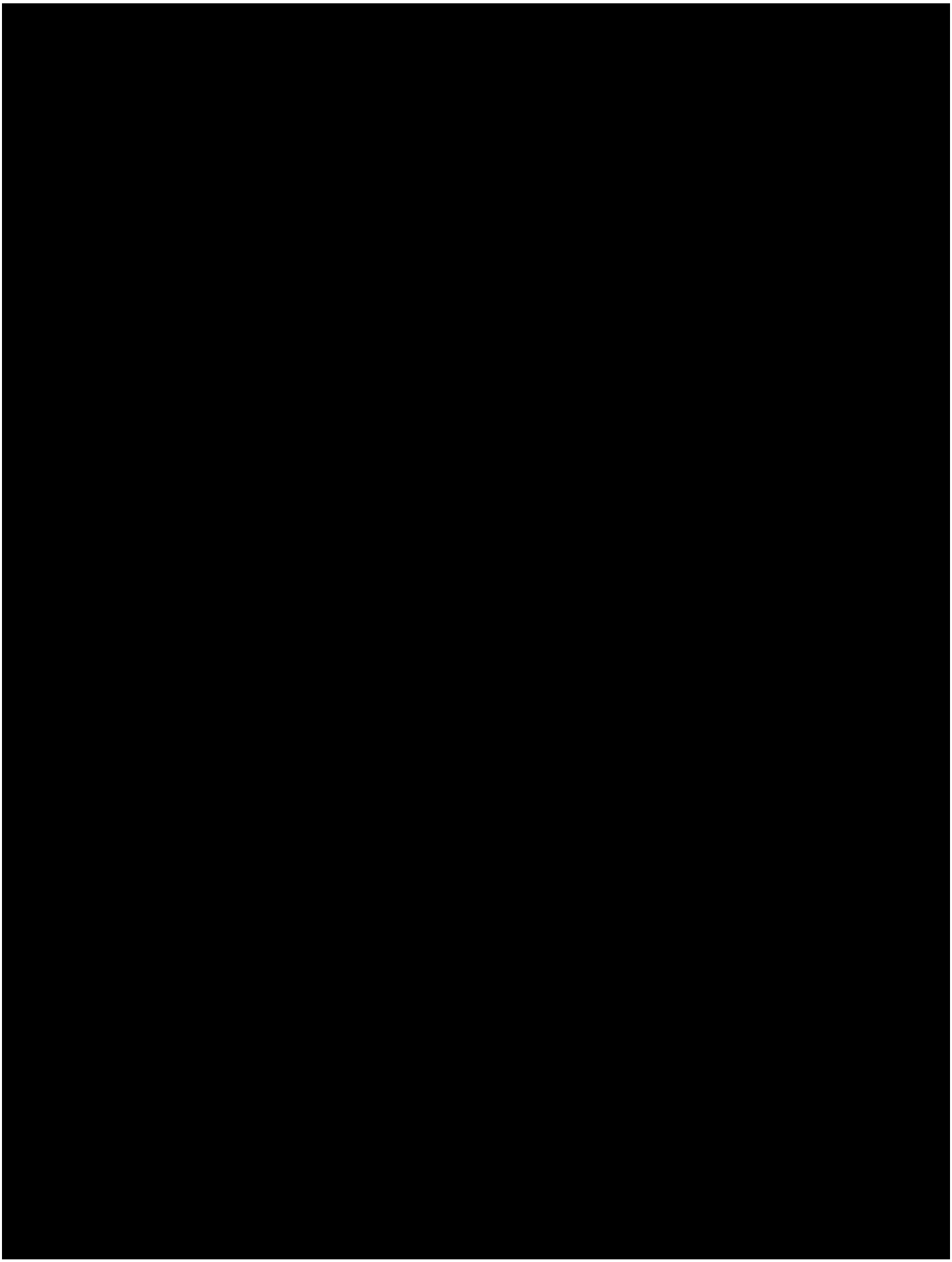

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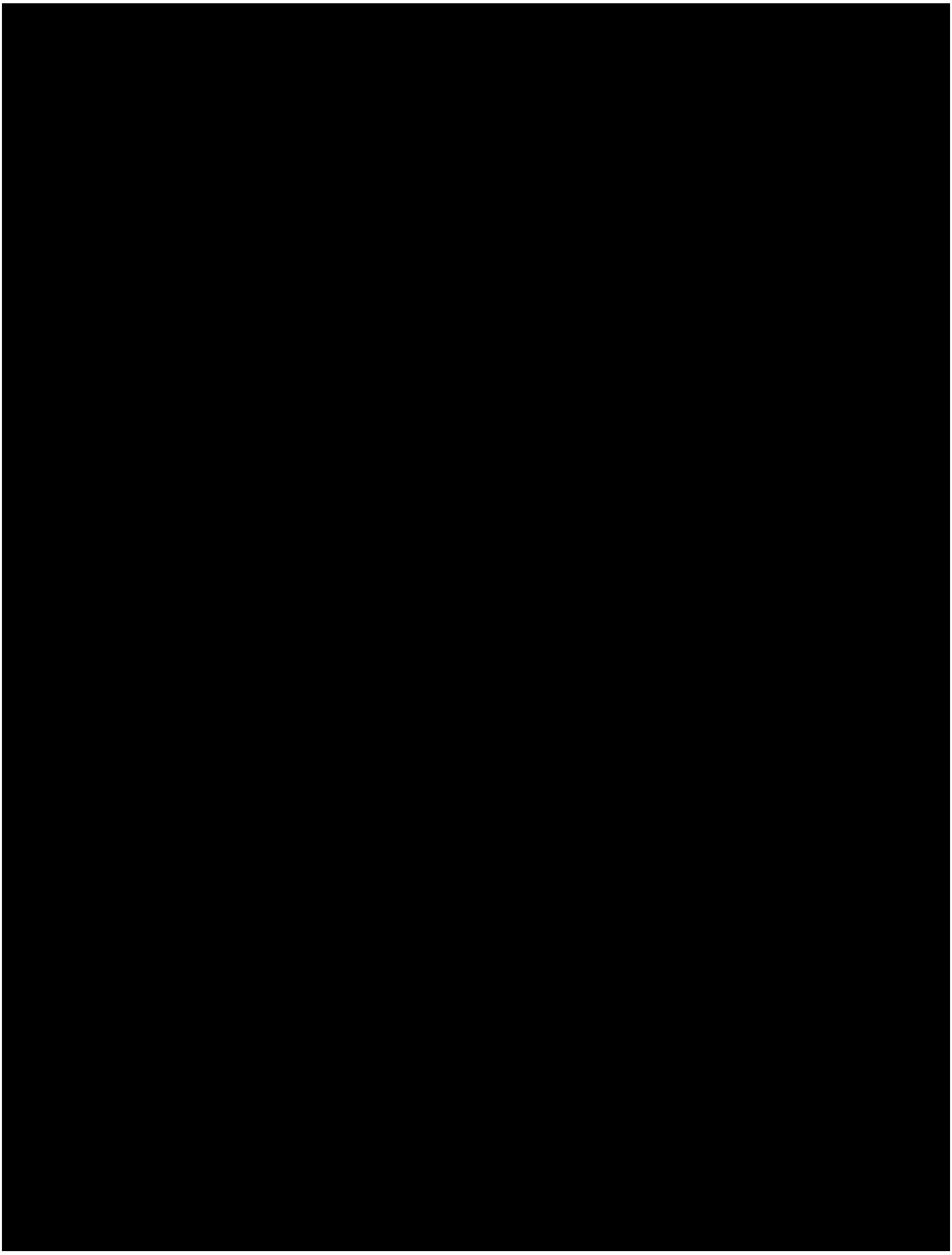

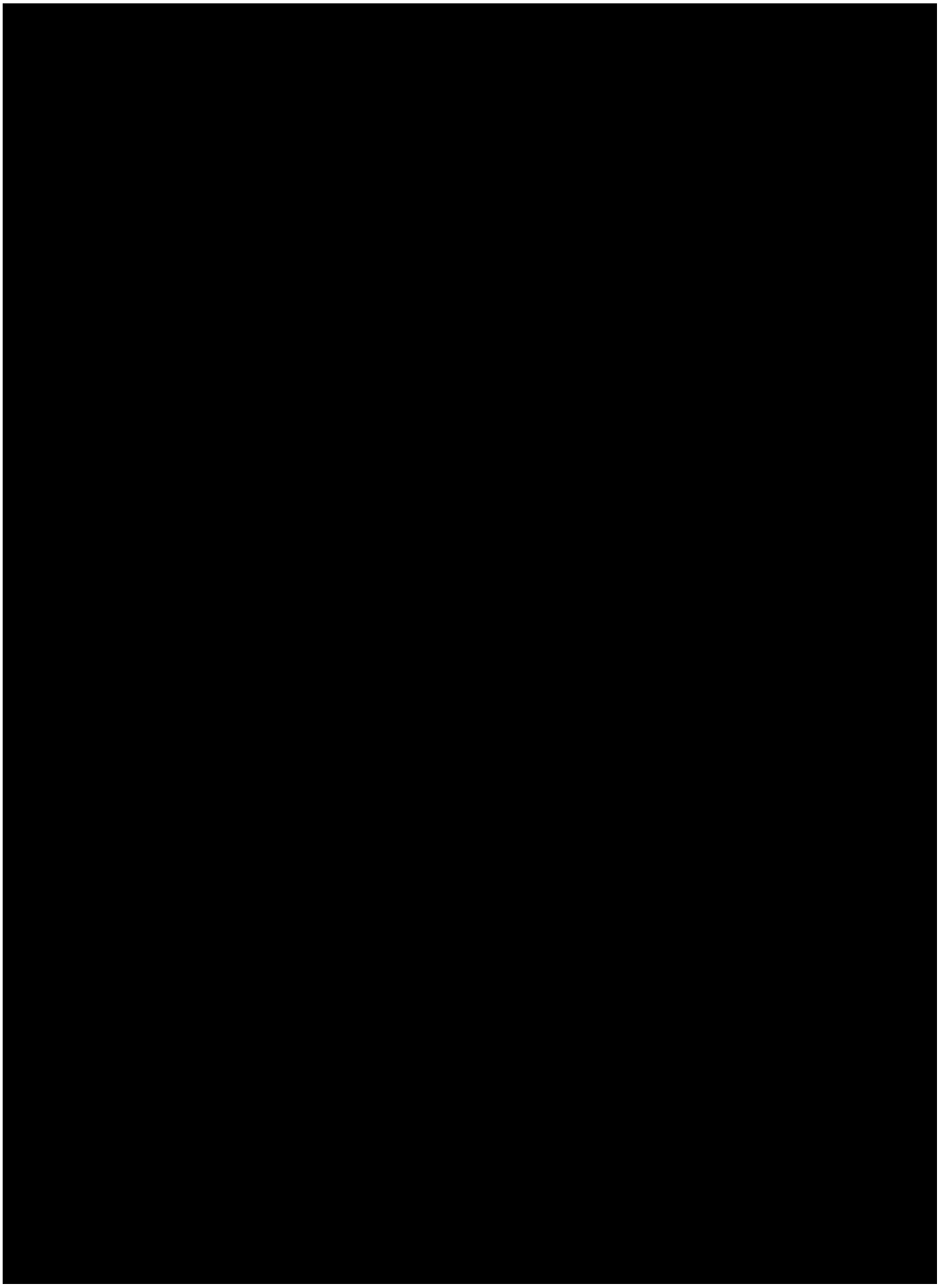

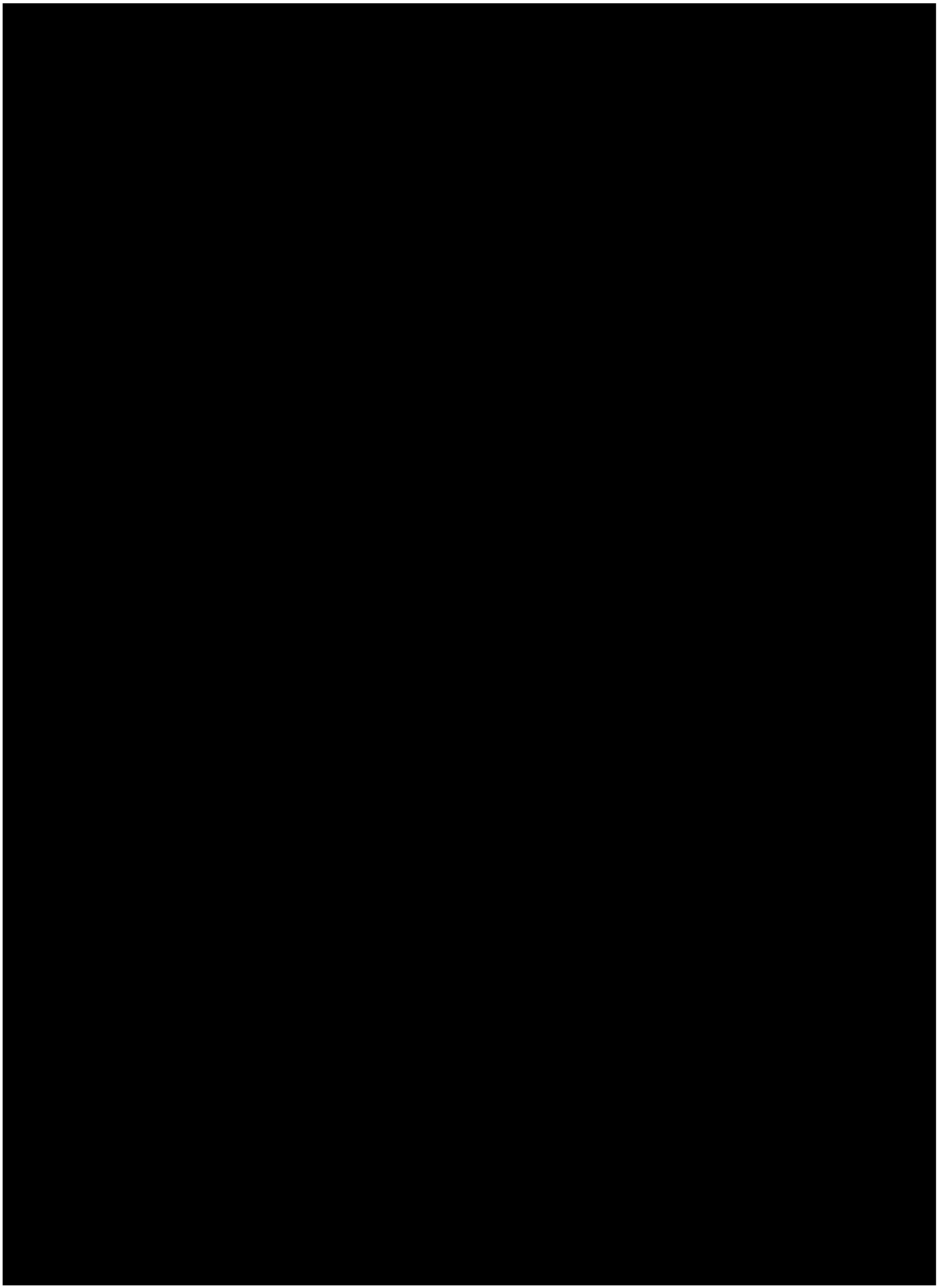

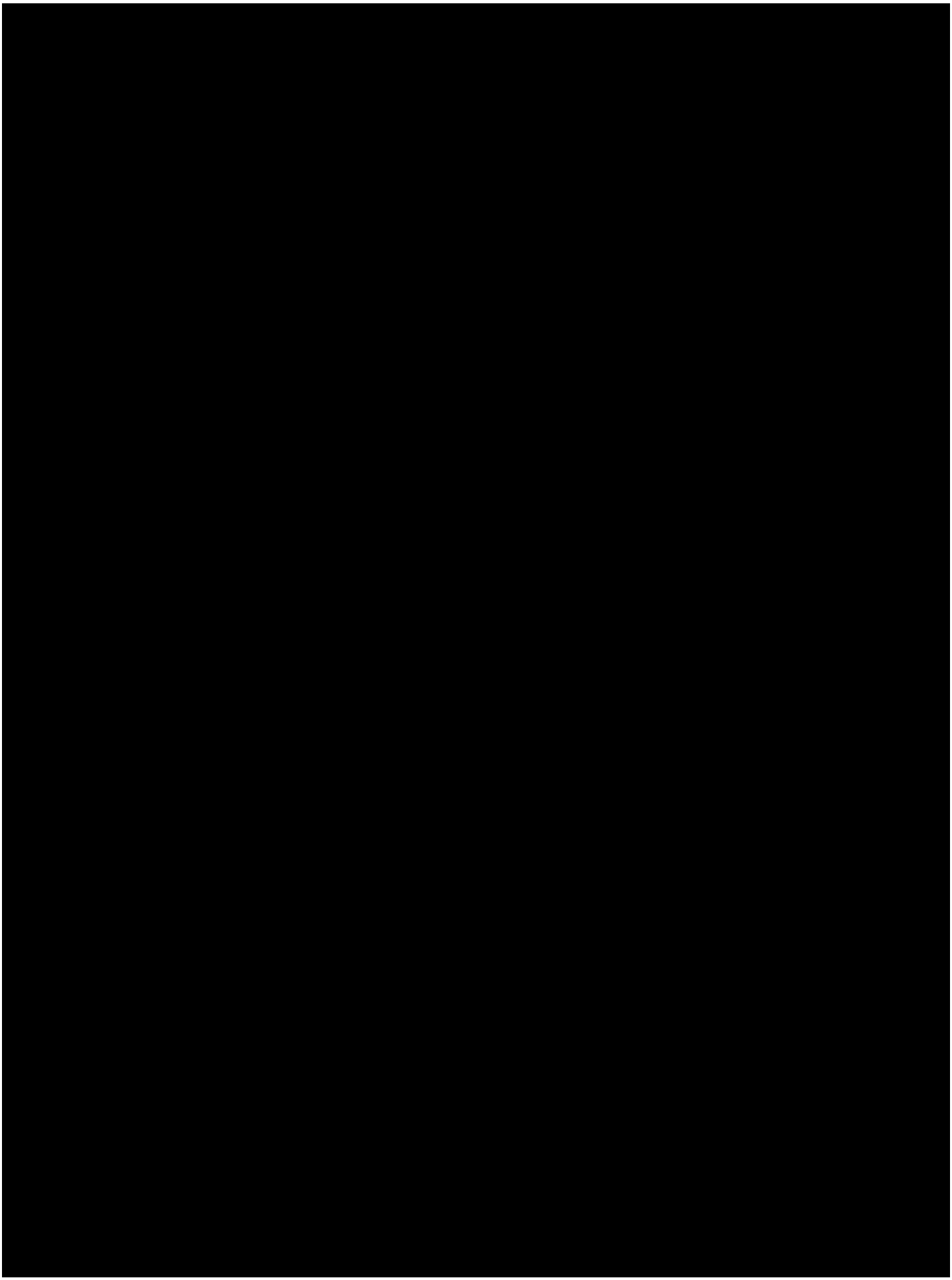

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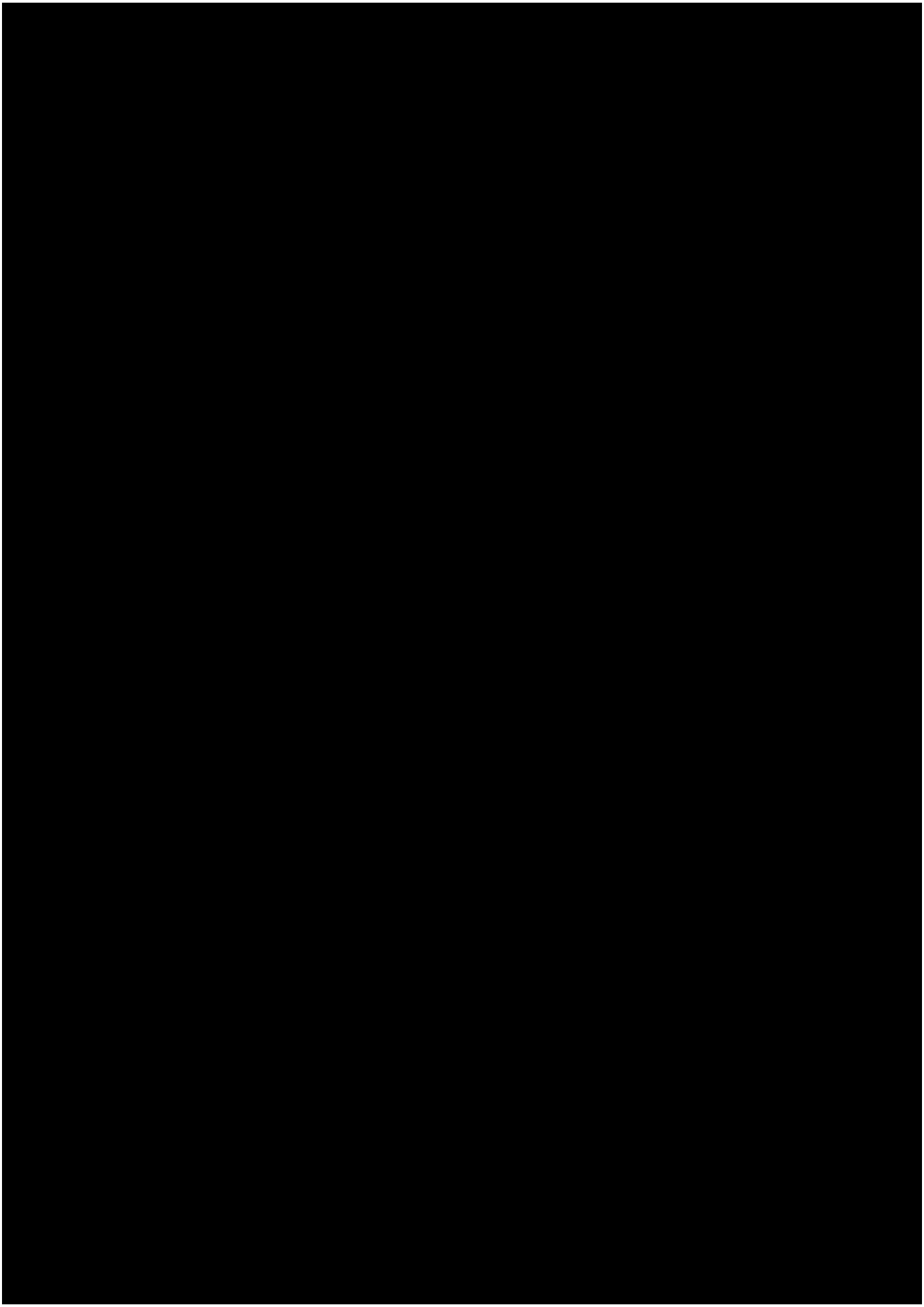

1. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number	5
Date of Change Request	
Originator of need for Change Request	Customer
Proposed Implementation Date of Change	12th April 2017
Date of expiry of validity of Change Request	Not Applicable
Contractor's estimated time and cost of evaluation	Not Applicable
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**	Nil

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**

DETAILS OF CHANGE REQUEST

Summary

1. The Customer is establishing a new Rail Operations Centre (ROC).

2. The Customer wishes to procure the design, installation, testing and implementation of new technologies at the Site which will replace the current rail operation technology and provide enhanced capability to improve key 'day of operations' processes (**the Project**).

3. An ECI Contract was entered into by the Parties in relation to the Project on 24 December 2014. The output of the ECI Contract was a High Level Solution Design and BAFO. That ECI Contract was separate to this Customer Contract.

4. On 15 October 2015 this Customer Contract was entered into by the Parties as the 'Detailed Design Contract'. The Detailed Design Contract refined the technical scope of the IMS that was developed in the ECI Contract.

5. Change Request 1 to this Customer Contract was executed on or about 25 February 2015 to provide additional funding for Release 1 Detailed Design and additional funding for Release 1 implementation work.

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6. Change Request 2 to this Customer Contract was executed on or about July 2016 to add in REM Mobile functionality and system administration services.

7. Change Request 3 to this Customer Contract provided for REM Mobile deployment services and REM 2016.2 development and delivery incorporating Customer requirements.

8. Change Request 4 to this Customer Contract was executed to expand the scope of work under the PIPP to include all work from Detailed Design for Release 1 through to testing and implementation of Release 1.

9. This Change Request will amend the Customer Contract (including the PIPP) so that:

   (a) the Letter of Intent dated on or about 12 April 2017 (the **Letter of Intent**) is terminated and of no further effect;

   (b) all payments made under the Letter of Intent are deemed to have been made under the Customer Contract;

   (c) all work paid for or performed under the Letter of Intent are deemed to have been performed under this Customer Contract; and

   (d) the scope of work under the PIPP has been expanded to include all work described in the attached PIPP, which includes all work from Detailed Design of Release 1-Tranche 2 through to testing and implementation of Release 1-Tranche 2.

10. The Parties intend that:

    (a) this Change Request takes effect so that the Customer Contract is varied with effect from the "Proposed Implementation Date of Change" specified on the cover of this Change Request;

    (b) the Customer Contract as amended by this Change Request continues in full force and effect;

    (c) all rights and liabilities of the Parties under this Customer Contract prior to the "Proposed Implementation Date of Change" are as set out in this Customer Contract as it existed prior to the date of this Change Request;

    (d) nothing discharges, prejudices, releases or otherwise affects any liability, obligation or accrued right arising under the Customer Contract prior to the "Proposed Implementation Date of Change"; and

    (e) this Change Request is intended only to vary the Customer Contract and not to terminate, discharge, rescind or replace it.

11. The documents attached to this Change Request show the Customer Contract as it exists after this Change Request is implemented. Subject to paragraph 14, the marking up shows the changes from the Customer Contract as it existed immediately prior to this Change Request.

12. The Parties acknowledge that the PIPP attached to the Change Request may not be a fully consolidated PIPP, and that some content from previously performed activities may be missing. The parties have proposed creating a consolidated PIPP following execution of this Change Request including all activities that were set out in:

    (a) The PIPP as attached to the original Customer Contract;

    (b) The PIPP attached to Change Request 1;

    (c) The PIPP attached to Change Request 2;

    (d) The PIPP attached to Change Request 3;

    (e) The PIPP attached to Change Request 4; and

(f) The PIPP included in Attachment 1 to this Change Request.

If a consolidated PIPP is not agreed, then the Parties acknowledge that their obligations under this Customer Contract at any point in time are as set out in the PIPP attached to the Customer Contract at that point in time.

SCOPE

The scope of this CR5 includes adding to the Customer Contract all design, build, testing and implementation work for Release 1-Tranche 2.

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

The effects of CR5 are as shown in mark-up in the contract documents contained in Attachment 1 to this Change Request.

EFFECT OF CHANGE ON PROJECT TIMETABLE

A new Project Schedule for Release 1-T2 is attached to the PIPP. The Project Schedule for Release 1 remains unchanged.

New PIPP (annexed)

The current PIPP is replaced in its entirety as set out in Attachment 1 to this Change Request. As noted above, that PIPP may not include a complete restatement of all Deliverables from the date of execution of the Customer Contract. A consolidated PIPP will be prepared promptly following signing of this Change Request.

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

The effect of CR5 is to increase the value of this Customer Contract by [redacted] (excluding GST) to [redacted] (excluding GST).

Please refer to Section 23 of the updated PIPP in Attachment 1 for a full break down of the relevant Prices.

CHANGES TO CSI

No change.

CHANGES TO CUSTOMER PERSONNEL

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

CHANGES TO CUSTOMER ASSISTANCE

No change.

PLAN FOR IMPLEMENTING THE CHANGE

Not applicable.

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Contractor

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Customer

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

None.

EFFECT ON USERS OF THE SYSTEM/SOLUTION

None.

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Additional documentation will be supplied for Release 1-T2 as detailed in the updated PIPP set out in Attachment 1 to this Change Request.

EFFECT ON TRAINING

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

None.

ASSUMPTIONS

None.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

The following documents contained in Attachment 1 and Attachment 2 (or Attachment 3 for a clean version) form part of this Change Request (in addition to this Change Request Form):

(a) the revised General Order Form;
(b) the revised Module 3 Order Form;
(c) the revised Additional Conditions; and
(d) the revised PIPP.

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

The Customer Contract is amended as set out in the documents set out in Attachment 1 and Attachment 2 to this Change Request. The amendments are shown in mark-up. A clean copy of the Customer Contract is also attached in Attachment 3.

AUTHORISATION

Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

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SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability

Signature of Customer Representative

MARK JONES

Print name

24-05-2017

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

MARTIN RAMPL

Print name

23/05/2017

Date

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Schedule 1: General Order Form

CUSTOMER

Item 1 Name of Customer

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Customer's full legal name:	Sydney Trains (ABN 38 284 779 682)

Item 2 Service Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Customer's service/delivery address:	Level 13, 477 Pitt Street, Sydney NSW 2000

Item 3 Customer's Representative

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Representatives (clause 23.1)	
Specify an employee who is the Customer's Authorised Representative:	Tony Eid (or delegate as nominated by the Customer from time to time)

CONTRACTOR

Item 4 Name of Contractor

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Contractor's full legal name:	Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Item 5 Service Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
Specify the Contractor's service/delivery address:	1 / 425 Nudgee Road, QLD, 4011

Item 6 Contractor's Representative

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Representatives (clause 23.1)	
Specify an employee who is the Contractor's Authorised Representative:	Martin Rampl

Item 7 Head Agreement

This Item 7 must be completed when the Customer Contract is entered into under a Head Agreement.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.1)	
Specify the Head Agreement number:	Not applicable.
Specify the Head Agreement title:	Not applicable.
Specify the Term of the Head Agreement: Start Date: End Date: If the Term of the Head Agreement has expired the Customer must obtain the Contract Authority's approval to enter into a further Customer Contract, and this approval should be attached to this General Order Form.	Not applicable.
Insurance (clause 16.2)	Not applicable.
Specify the insurances required under the Head Agreement:	Not applicable.
The default insurance requirement under the Head Agreement is public liability insurance with an indemnity of at least $10,000,000 in respect of each claim for the period of cover. Specify any higher limit of cover that is required by the Head Agreement:	Not applicable.
The default insurance requirement under the Head Agreement is product liability insurance with an indemnity of at least $10,000,000 for the total aggregate liability for all claims for the period of cover. Specify any higher limit that is required by the Head Agreement:	Not applicable.
Specify if professional indemnity/errors and omissions insurance was required under the Head Agreement. If so, the default insurance requirement is for a limit of cover of $1,000,000 in respect of the total aggregate liability for all claims for the period of cover. Specify any higher limit that is required by the Head Agreement:	Not applicable.
Workers' compensation insurance in accordance with applicable legislation:	Not applicable.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify any other type of insurance required under the Head Agreement and the specified amount:	Not applicable.
Performance Guarantee (clause 17.1)	Not applicable.
Specify if the Contractor was required to provide a Performance Guarantee under the Head Agreement:	Not applicable.

Item 8 Modules that form part of the Customer Contract

Formation (clause 3.8(a))

Indicate, by marking with an X, the Modules that apply

Module 1 – Hardware Acquisition and Installation	☐	Module 11 – Telecommunications Services	☐
Module 2 – Hardware Maintenance and Support Services	☐	Module 12 – Managed Services	☐
Module 3 – Licensed Software	☒	Module 13 – Systems Integration	☐
Module 4 – Development Services	☐	Module 14 –Hosting Services	☐
Module 5 – Software Support Services	☐	Module 15 Satellite Services	☐
Module 6 – Contractor Services	☐		☐
Module 7 – Professional Services	☒		☐
Module 8 – Training Services	☒		☐
Module 9 – Data Migration	☒		☐
Module 10 – X as a Service	☐		

Item 9 Schedules that form part of the Customer Contract in addition to the General Order Form

Formation (clause 3.8(b))

Indicate, by marking with an X, the Schedules that apply

Schedule 1 – General Order Form	Applies	Schedule 7 – Statutory Declaration – Subcontractor	☒
Schedule 2 – Agreement Documents	☒	Schedule 8 – Deed of Confidentiality	☒
Schedule 3 – Service Level Agreement	☒	Schedule 9 – Performance Guarantee	☒
Schedule 4 – Variation Procedures	☒	Schedule 10 – Financial Security	☒
Schedule 5 – Escrow Agreement	☒	Schedule 11 – Dispute Resolution Procedures	☒
Schedule 6 – Deed Poll – Approved Agents	☐	Schedule 12 – Project Implementation and Payment Plan	☒

Item 10 Contract Period

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contract Period (Clause 2.4)	
Specify the Commencement Date if it is not the date when the Customer and the Contractor sign the Customer Contract:	7 August 2015
Specify the end of the Contract Period:	The Contract Period will commence on the Commencement Date and end on the date on which the Contractor has discharged all of its obligations under this Customer Contract. Subject to the Customer paying the full licence fee for the Licensed Software, the Licence for the Licensed Software is perpetual.
Specify any period of extension of the Contract Period in days/weeks/years:	Not applicable.

Item 11 Common Details

Formation (clause 3.4)			
Product and/or Service	**Price per Unit**	**Quantity**	**Extended Price**
As described in the PIPP set out in Annexure B to the Customer Contract, as updated or varied by the Parties from time to time (**PIPP**).	As specified in the PIPP.	As specified in the PIPP.	As specified in the PIPP.
		Sub-Total:	As specified in the PIPP.
		Delivery Charges:	As specified in the PIPP.
		Any Other Charges:	As specified in the PIPP.
		GST:	As specified in the PIPP.
This is the Contract Price (plus GST)		**Total Amount:**	As specified in the PIPP.

Item 12 Delivery Address

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Delivery (clause 5.1)	
Specify the address of the Site where delivery is to be made:	As specified in the PIPP.
Specify any delivery instructions:	As specified in the PIPP.
Specify the hours during which delivery may be made to the Site:	As specified in the PIPP.

Item 13 Contract Specifications

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Formation (clause 3.4)	
If the Contract Specifications are the User Documentation leave this Item blank. If the Contract Specifications comprise other documents, list those documents in order of priority:	The Contract Specifications consist of: a) the Requirements as defined in the PIPP; b) the Deliverables set out in the PIPP; c) any requirements for the Deliverables set out in the Additional Conditions specified in Annexure A to this Customer Contract (**Additional Conditions**); d) any documents included and / or referenced in Schedule 2 – Agreement Documents; e) any other requirement or specification agreed between the Parties in writing; and f) any documents incorporated by reference, or referred to, in any of the documents detailed above.

Item 14 Payment

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Payment (clauses 11.1 and 11.2)	
Invoicing (clause 11.7 and 11.9)	
Specify the Customer's officer to receive invoices:	John Emblem
Specify address to which invoices should be sent:	Level 13, 477 Pitt Street, Sydney NSW 2000.
Specify the number of days from receipt of a Correctly Rendered Invoice that the Customer must make payment. If this Item is not completed, the Customer must pay the Contractor within 30 days from receipt of a Correctly Rendered Invoice.	The default period of 30 days unless otherwise specified in the PIPP.
Specify when the Contract Price must be paid: E.g. if the earlier Price is to be paid on delivery, insert "The Contract Price is due on delivery". If payment is to be made on more than one occasion then consider using a PIPP under Item 20.	As specified in the PIPP.
Specify whether the Contract Price is fixed: E.g. does the unit Price per item vary for inflation or other factors? If so, specify the calculation for Price variations:	The Contract Price is fixed.

Item 15 User Documentation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
User Documentation (clause 5.4(b))	
Specify the Price of any additional copies of the User Documentation:	Nil.

Item 16 Management Committee

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Management Committee (clause 6.4)	
List the name/s of the Contractor's project manager, officers or other relevant persons who will sit on the management committee:	The Contractor's representatives are as specified in the PIPP.
Management Committee (clause 6.6)	
Specify the function to be performed by the management committee:	In addition to the functions specified in clause 6.6 of Part 2 of the Customer Contract, the additional functions of the management committee and the times at which the management committee must meet, are specified in the PIPP.
List the name/s of the Customer's project manager, officers or other relevant persons who will sit on the management committee:	The Customer's representatives are as specified in the PIPP.
Management Committee (clause 6.8)	
Specify the details, including the contents of the progress report to be submitted to the Customer's project manager:	As specified in the PIPP.
Specify any other details:	As specified in the PIPP.

Item 17 Performance Review Procedures

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Performance Reviews (clause 6.10)	
Specify if a service and performance review/s of the Contractor's performance of the Customer Contract is to apply:	No.
Specify any specific time intervals for service and performance reviews:	Not applicable.

Item 18 Site Preparation and Maintenance

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Site Specifications (clause 6.12)	
Specify if a Site Specification is required:	No. A Site Specification is not required.
Access to Customer's Site (clause 7.1(b))	
Specify any other requirements in relation to the Site access:	None.
Specify any requirements for the preparation and maintenance of the Site:	None.

Item 19 Implementation Planning Study

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Implementation Planning Study (clause 6.14)	
Specify if the Contractor must provide an implementation planning study:	No. An Implementation Planning Study is not required.
Specify the implementation planning study objectives and time for provision of study:	Not applicable.
Date for delivery of the implementation planning study to the Customer:	Not applicable.
Specify if the implementation planning study need to undergo Acceptance Tests in accordance with clause 10.1(b):	Not applicable.

Item 20 Project Implementation and Payment Plan (PIPP) and Staged Implementation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Project Schedule (clause 6.17)	
Invoicing (clause 11.7)	
Specify if a PIPP has been created. If so, identify the document in this Item and attach as an Annex to this General Order Form: E.g. the PIPP is in a document "PIPP v1_1 27/10/11" and Annexure 1 to the Customer Contract.	Yes. The PIPP is set out in Annexure B to the Customer Contract.
Staged Implementation (clause 6.20)	
Specify if there is to be Staged Implementation: If so, details of the Deliverables that comprise each Stage must be stated in the PIPP together with the period during which the Customer must give written notice to move to the next Stage (if greater than 10 Business Days):	The Contractor is to undertake the Project in the Stages set out in the PIPP. For the avoidance of doubt, a "Stage" is defined as a "Phase" in the PIPP.

Item 21 Liquidated Damages

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Liquidated Damages (clause 6.28 to 6.34)	
Specify if Liquidated Damages (LDs) will apply:	Liquidated Damages will apply.
Specify the Milestones which are LD Obligations:	The following Milestones will be LD Obligations: a) Release 1 Go Live scheduled for 10 December 2016 or a date in March 2017 to be notified to the Contractor in writing should the Customer decide to delay Release 1 Go Live. b) Release 1-T2 Go Live scheduled for 7th of April 2018 or an alternative date if the Customer decides

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
	to delay Release 1-T2 Go Live c) Such other Milestones as may be agreed in the PIPP as LD Obligations
Specify the Due Date for completion of each LD Obligation:	As detailed above
Specify the calculation and amount of LDs for each LD obligation:	For the Release 1 Go Live, Liquidated Damages of [redacted] per day will apply. For the Release 1-T2 Go Live, Liquidated Damages of [redacted] per day will apply. For other LD Obligations, the Liquidated Damages will be as set out in the PIPP.
Specify the maximum number of days LDs are to be paid for each LD obligation:	**For Release 1:** For the Release 1 Go Live, the maximum number of days Liquidated Damages are to be paid for each LD Obligation is 45 days subject to a cap of [redacted] representing 10% of the portion of the Contract Price that relates to the implementation activities. For the purposes of determining the Contract Price for Liquidated Damages for the Release 1 Go Live, the following calculation was used: Detailed Design price: [redacted] plus Implementation charges of [redacted]. **Total:** [redacted] Less, Detailed Design charges of a. Original BAFO charge: [redacted] b. Extension of personnel effort: [redacted] c. Personnel Efforts until 29 February 2016 [redacted] **Deducted Total:** [redacted] **Portion of Contract Price that attracts LDs for the Release 1 Go Live:** [redacted] **For Release 1-T2:** For the Release 1-T2 Go Live, the maximum number of days Liquidated Damages are to be paid for each LD Obligation is [26] days subject to a cap of [redacted] representing 10% of the portion of the Contract Price that relates to Release 1-T2. **Portion of Contract Price that attracts LDs for the Release 1-T2 Go Live:** [redacted]

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Item 22 Customer Supplied Items (CSI) and Customer Assistance

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Customer Supplied Items (CSI) (clause 6.36)	
Specify each CSI to be provided by the	As specified in the PIPP.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Customer: CSI may be: office access, desks etc (specify location, standards, times of access); Hardware or software (specify equipment, capacity, versions of software and dates of availability); VPN access or other remote access (specify capacity and hours available). [Note: details of any Customer Personnel should be specified in Item 26].	
Specify if any CSI must be covered by support and maintenance contracts including the period of cover, the Contractors rights of access to any third party support help desk, the hours and service levels to which support and maintenance must be available to the Contractor:	No.
Specify the times when each CSI is to be provided:	As specified in the PIPP.
Specify any requirements to attach to any CSI: E.g. any standards that the CSI must meet.	Not applicable.
Specify if the Contractor must conduct any verification checks of CSI's to ensure they are satisfactory:	As specified in the PIPP.
If so, specify the verification check process for each CSI: Include: • a process to manage satisfactory and unsatisfactory verification checks; • a process to manage 'reissued' CSI's: • a process to manage repeat CSI verification checks: • a process to manage 'draft' or 'incomplete' and 'updated' CSI's; • a process to manage rejected CSI's: • a process to manage previously satisfactory CSI which becomes defective: • a list of required verification check forms and/or registers and a corresponding data entry process: • a list of Customer and Contractor nominee/s for responsibility to undertake verification checks:	As specified in the PIPP
Specify any amount payable by the Contractor to the Customer for any item of CSI:	Nil.
Customer Assistance (clause 6.41)	

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify the instructions, information, data, documents, specifications, plans, drawings and other materials that must be provided by the Customer to the Contractor:	As specified in the PIPP.

Item 23 Escrow

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Escrow (clause 6.42)	
Specify if an escrow arrangement is required:	Yes. An escrow arrangement is required in the form of Schedule 5 and will reflect the principles set out below. The Parties have agreed that: (a) subject to the exception in paragraph (b) below, the Contractor must include the following material in escrow for each item of software that is a Deliverable (including any modification or customisation of that Deliverable) (each a **Software Deliverable**): (1) the object code or Java Byte code of that Software Deliverable; (2) all source code; (3) documentation that would enable a competent programmer to understand the program logic of that Software Deliverable and keep that Software Deliverable in good order or repair, such as relevant programmer notes, plans, drawings; (4) a copy of all tools (excluding 3rd Party Software as detailed in point (c)) and libraries required to recompile the source code of that Software Deliverable and full written details of the development environment to allow the Customer (or a competent contractor) to replicate that Software Deliverable; (5) any code and build tools necessary for the Customer (or a competent Contractor) to rebuild the complete Software Deliverable; (b) the Contractor must include a list of all Third Party Software (including the applicable software vendor) in escrow; and (c) the Contractor must update the Escrow Material to ensure it is up date to reflect any New Release supplied to the Customer. The initial deposit will be for REM 2016.R2 and REM Mobile 2016.R2 (unless the parties rollback to REM 2016.R1 and REM Mobile 2016.R1 in accordance with the PIPP). Further deposits will be made as required under this Customer Contract. **The deposit for Release 1-T2 being the 2017.R2 Release will be made within 14 days of Acceptance Tests have been successfully completed.**
Specify the parties to the escrow arrangement:	Escrow agent: Assurex Escrow Pty Ltd (ABN 64 008 611 578) Frequentis Australasia Pty Ltd (ABN 25 107 550 489) as

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Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
	Contractor CNS - Solutions & Support GmbH (ATU 61108107)~~Frequentis AG (ATU14715600).~~ Sydney Trains (ABN 38 284 779 682) as Principal
Specify the time for the escrow arrangement to endure:	The Escrow Agreement must be formally established within 1 week, or any other such time as may be agreed between the Parties, of the date of execution of Change Request 4. The term of the Escrow Agreement is from the date of signing until the date that is 12 months following expiry of this Customer Contract.

Item 24 Business Contingency Plan

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Business Contingency (clause 6.45)	
Specify if a Business Contingency Plan is required:	Yes
Specify when the Business Contingency Plan is required:	The Contractor provided the Business Contingency Plan to the Customer prior to the Commencement Date. The Contractor shall provide an updated Business Contingency Plan as requested by the Customer.
Specify any information to be included in the Business Contingency Plan including the business contingency services required and the period of the services:	Not applicable. No additional information is required
Specify the periods that the Business Contingency Plan must be reviewed, updated by the Contractor:	The Contractor shall certify currency of the Business Contingency Plan on an annual basis.
Specify the time periods that the Contractor is to test the operability of the Business Contingency Plan:	The Contractor shall test the Business Contingency Plan annually or any other such time that may be agreed between the Parties.

Item 25 Secrecy and Security

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Access to Customer's Site (clause 7.4)	
Specify any secrecy or security requirements that the Contractor and its Personnel must comply with: E.g. insert a reference to any document that includes a security requirement.	The Contractor must comply with, and must ensure that each of the Contractor's Personnel comply with: (a) the Customer's confidentiality and system security policy and procedures and execute a deed of confidentiality in a form acceptable to the Customer; (b) the Customer's Code of Conduct; (c) the Customer's IT policy and procedures; (d) all other reasonable requirements specified by the Customer.

Item 26 Customer's Personnel

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Personnel General (clause 8.5)	
Specify the Customer's Personnel who will be available to work with the Contractor and their roles and responsibilities: Also specify the times and duration of their involvement as well as their authority levels:	As specified in the PIPP.

Item 27 Specified Personnel

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specified Personnel (clause 8.8)	
Specify the identity and roles and responsibilities of any of the Contractor's Specified Personnel:	Details of the Contractor's Specified Personnel are specified in the PIPP.

Item 28 Subcontractors

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Agents and Subcontractors (clause 8.17)	
Specify which subcontractors are required to provide a Statutory Declaration by Subcontractor, substantially in the form of Schedule 7:	The Contractor must obtain a statutory declaration for the Subcontractor where required by the Customer or otherwise where that statutory declaration is a condition of the Customer's approval of a subcontract under clause 8.14.

Item 29 Quality Standard Accreditation

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contractor Warranties (clause 9.1(h))	
Specify any quality standard accreditation arrangements the Contractor must hold during the Contract Period:	The Contactor must maintain accreditation that it is compliant with the following standards: (a) Quality Management System Guideline 2006; (b) AS/NZS ISO 9001:2008 standard or an approved equivalent standard as applicable to the Deliverables; and (c) any other standards specified in the PIPP or any of the Customer's policies or procedures that the Contractor is required to comply with (see item 30). If the Customer requires additional accreditations which are not specified in this Item 29 and that additional accreditation would cause the Contractor to incur material additional costs, the Contactor may raise a Change Request to address such additional costs.

Item 30 Contractor's Compliance with Standards, Codes and Laws

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Contractor Warranties (clause 9.1(g))	
Specify any laws (other than Statutory Requirements) the Contractor is to comply with:	Any statute, regulation, by-law, ordinance or subordinate legislation in force from time to time in any jurisdiction other than Australia (including any industry codes of conduct) that are applicable to the Deliverables, the Customer or the Contractor (**Laws**). If there are any changes to Laws during the Contract Period which are specific to the rail industry, and compliance with those changes requires the Contractor to incur material additional costs, the Contractor may raise a Change Request to address such additional costs.
Specify any codes, policies, guidelines or standards the Contractor is to comply with:	The Customer's policies, standards and procedures as notified to the Contractor from time to time. If there are any changes to standards or codes of conduct during the Contract Period which are specific to the rail industry, and compliance with those changes requires the Contractor to incur material additional costs, the Contractor may raise a Change Request to address such additional costs.

Item 31 Customer's Compliance with Standards, Codes and Laws

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Customer Warranties (clause 9.3(h))	
Specify any laws (other than Statutory Requirements) the Customer is to comply with:	None.
Specify any codes, policies, guidelines or standards the Customer is to comply with:	None.

Item 32 Acceptance Testing

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Part 3 Dictionary (clauses 1.2 to 1.4)	
Acceptance Test Notification Period is the period from the end of the Acceptance Test Period, within which the Customer must provide to the Contractor written notice of the result of the Acceptance Test. Specify this period: If no period is specified, the period is 2 Business Days:	2 Business Days or as otherwise agreed by the Parties.
Acceptance Test Data is the data that is provided by the Customer, and agreed by the Contractor that reflects the data the Customer will use in the Deliverable, that is to be used for Acceptance Testing. Specify the Acceptance Test Data:	The Acceptance Test Data for each~~the~~ Testing Phase (as defined in the PIPP) will be: a) the Data developed by the Configuration Team as described in Section 8.2 [and section [XX]] of the PIPP; and b) in relation to transaction data, as agreed between the Parties during SAT.
Acceptance Test Period is the period for	For the purposes of SAT (as described in the PIPP) – 20

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Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
the performance of any Acceptance Tests for any Deliverable. Specify this period: If no period is specified, the period is 10 Business Days from the date of delivery of the Deliverable to the Customer.	Business Days or any other such time reasonably required to complete SAT. The Contractor's involvement in other tests contemplated within the PIPP shall be as required by and at the request of the Systems Integrator (as defined in the Additional Conditions).
Acceptance (clause 10.1)	
For each Deliverable, specify whether each Deliverable is to undergo Acceptance Testing: If not, the Deliverable will be Accepted under clause 10.1(a).	For Deliverables that are Documents, the approval procedure as specified in clause 13 of the Additional Conditions will apply. Licensed Software will be subject to Acceptance Testing as detailed in the PIPP. For clarity, initial delivery and physical receipt of the Licensed Software by the Customer does not constitute acceptance by the Customer of the Licensed Software. The Licensed Software will undergo Acceptance Testing during the Testing Phase, as set out in the PIPP.
If a Deliverable is not to undergo Acceptance Tests, specify the period required following delivery of the Deliverable as required by the Order Documents when the Actual Acceptance Date (AAD) for a Deliverable occurs: If no period is specified, then the period is 2 Business Days.	For Deliverables that are Documents, the approval procedure as specified in clause 13 of the Additional Conditions will apply.
Conducting Acceptance Tests (clause 10.3)	
For each Deliverable that is to undergo Acceptance Tests, specify details of the Acceptance Testing requirements:	As set out in the PIPP. For clarity, Deliverables from both Release 1 and Release 1-T2 will undergo Acceptance Tests.
Specify the identification of the Deliverables or part of the Deliverables to be tested:	As specified in the PIPP.
Specify the allocation of each Party's responsibilities in relation to testing, including the Party responsible for conducting the Acceptance Tests:	The Contractor will be responsible for all activities relating to REM SAT testing (as described in the PIPP). Unless otherwise specified in the PIPP, the Systems Integrator is responsible for all other Acceptance Tests. The Contractor must provide all reasonable assistance as may be requested by the Systems Integrator in respect of the Acceptance Testing being undertaken by the Systems Integrator and as described in the PIPP.
Specify which Party is to provide the test environment, including hardware, software, power, consumables and other resources and when the environment and resources must be ready for use:	The Customer is responsible for the provision of the environments for Acceptance Testing unless stated otherwise in the PIPP.
Specify the methodology and process for conducting Acceptance Tests:	The methodology and process for conducting Acceptance Tests will be set out in the Test Strategy and Test Plans (as attached to the PIPP or developed in accordance with the PIPP), or as otherwise agreed by the Parties from time to time in writing.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify the scheduling of Acceptance Tests including the Acceptance Test Period and the Acceptance Test Notification Period:	Acceptance Tests will be scheduled as set out in the Master Project Schedule. An extract from the Master Project Schedule for each of Release 1 and Release 1- T2 is attached to the PIPP as Appendix C.
Specify the Acceptance Criteria used to test whether the Deliverable meets the Contract Specification and other requirements of the Customer Contract:	As specified in the PIPP. **Note:** In addition to the Acceptance Criteria expressed in the PIPP, Acceptance Criteria may be amended by agreement by the Parties prior to commencement of the relevant Acceptance Test Phase.
Specify the Acceptance Test Data required:	As per "Acceptance Test Data" row above.
If an Acceptance Test document has been created that addresses the above points it can be attached to the General Order Form by identifying the document here:	Not applicable.

Item 33 Credit/Debit Card

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Payment (clause 11.3)	
Specify any credit/ debit card or electronic facility that the Customer may use to pay the Contractor:	Not applicable.
Specify any fee that is applicable for payment by credit/debit card	None.

Item 34 Intellectual Property

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Existing Material (clauses 13.7 and 13.9)	
Specify any terms and condition applicable for granting a license for Existing Material owned by a third party:	The licence granted under clause 13.7 is granted on terms which are the same as the terms of the additional licence rights specified in clause 30 of the Additional Conditions. In the case of third party Existing Material that is open source software, the licence granted under clause 13.7 is granted on terms which incorporate terms set out in 29 of the Additional Conditions.
Specify any fees to be charged for any license to use any of Contractor's Existing Materials:	Nil.
Customer Owned New Material (clause 13.10)	
Specify if clause 13.10 applies, and if so, to which items of New Material:	Clause 13.10 applies. The Parties acknowledge and agree that no software will be New Material. However, other Material (including documentation) may be New Material.

Item 35 Confidentiality

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Confidentiality (clause 14.1)	
Specify if the Contractor must arrange for its Subcontractors to execute a Deed of Confidentiality substantially in the form of Schedule 8 – Deed of Confidentiality:	Yes. The Contractor must arrange for its Subcontractors to execute Deed of Confidentiality substantially in the form of Schedule 8.

Item 36 Insurance Requirements

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Insurance (clause 16.7)	
Level of indemnity of public liability insurance in respect of each claim for the period of cover. The default requirement in the Customer Contract is $10,000,000 [Only specify if a higher limit of cover that is required by the Customer Contract:]	The level of public liability insurance is $20,000,000.00 in respect of each claim and $50,000,000 in the annual aggregate. The insurance may be denominated in Euro, but must be equivalent in Australian dollars to $20,000,000. If at any time due to exchange rate fluctuations there is any change that would mean that the insurance held fell below $20,000,000 the Contractor must immediately notify the Customer and must take out such additional insurance as may be required in order to restore the level of cover.
Level of indemnity of product liability insurance for the total aggregate liability for all claims for the period of cover. The default requirement in the Customer Contract is $10,000,000 [Only specify if any higher limit of cover that is required by the Customer Contract:]	At least $20,000,000.00 for the total aggregate liability for all claims and in the annual aggregate. The insurance may be denominated in Euro, but must be equivalent in Australian dollars to $20,000,000. If at any time due to exchange rate fluctuations there is any change that would mean that the insurance held fell below $20,000,000 the Contractor must immediately notify the Customer and must take out such additional insurance as may be required in order to restore the level of cover.
If Services are being provided under the Customer Contract the default level of indemnity of professional indemnity insurance for the total aggregate liability for all claims for the period of cover is $1,000,000 [Only specify is a higher limit that is required by the Customer Contract:]	At least $10,000,000 for the total aggregate liability for all claims. The insurance may be denominated in Euro, but must be equivalent in Australian dollars to the requirements of this section. If at any time due to exchange rate fluctuations there is any change that would mean that the insurance held fell below those requirements the Contractor must immediately notify the Customer and must take out such additional insurance as may be required in order to restore the level of cover.
Specify any additional insurance that the Contractor is to hold, including the type of insurance, the term of the insurance and the amount of the insurance:	(a) Workers compensation insurance **Cover:** Liability for death of or injury (including occupations disease) to all workers performing the Services and Deliverables as required by *Workers Compensation Act 1987* (NSW). **Extension:** To be extended to cover the Principal's statutory liability to such workers, where permitted by *Workers Compensation Act 1987* (NSW). **Period required:** Before commencing the Services and Deliverables until the Contract Period expires. (b) Motor vehicle insurance – third party property **Cover:** All motor vehicles, trailers and mobile plant (whether registered or unregistered) used in connection with the Project. Any Subcontractors must be covered by motor vehicle insurance.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
	Period required: Before commencing the Services until the Service Term expires and, after that, whenever Services are performed.

Item 37 Performance Guarantee

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Performance Guarantee (clause 17.2)	
Specify if the Contractor must arrange for a guarantor to enter into a Performance Guarantee:	Yes. The Contractor must provide a Performance Guarantee from Frequentis AG in the form specified in Schedule 9 to this Customer Contract.
Specify the date by which the Performance Guarantee must be provided to the Customer. If no date is specified the Contractor must provide the Performance Guarantee to the Customer within 30 days of the Commencement Date.	Within 10 Business Days after the Commencement Date, or any other such time that may be agreed by the Parties in writing.

Item 38 Financial Security

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Financial Security (clause 17.4)	
Specify if the Contractor must provide a Financial Security: If so, specify the amount of the Financial Security:	Yes. The Contractor will provide two separate Financial Securities in the form specified in Schedule 10 of the General Order Form for amounts equal to: • 10% of the Contract Price for Release 1 (Detailed Design plus Implementation) until 12 months after AAD for Release 1; and • 10% of the Contract Price for Release 1-T2 (Detailed Design plus Implementation) until 12 months after AAD for Release 1-T2. The Financial Security must be with the Australia and New Zealand Bank (or as otherwise agreed to by the Customer) and back to backed with Raiffeisen Bank Internationalin Austria.
Specify the date by which the Financial Security must be provided to the Customer: If no date is specified, the Contractor must provide the Financial Security within 14 days of the Commencement Date.	Within 10 Business Days after the Commencement Date for the Financial Security covering Release 1 and within 10 Business Days after the execution of the Change Request incorporating Release 1-T2 for the Financial Security covering Release 1-T2.

Item 39 Limitation of Liability

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Limitation of Liability (clause 18)	
If the Parties cannot agree the amount that	Liability is determined under clause 18.3.

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
is legally payable under the Customer Contract for the: • Non-Recurring Service or Product; and/or • Short Term Recurring Service (as applicable) insert the amount that the Parties agree is the best estimate of the Contract Value for the relevant item (the Estimated Contract Price). Note: It may be necessary to separately identity the amounts payable under a single Customer Contract into separate amounts that are attributable to each of the different types of Product/ Service. **(See the definition of Contract Value in Part 3)**	
If Services are being provided under any of the following Modules: Module 6 – IT Personnel; Module 7 – Professional Services; Module 8 – Data Management; Module 11 – Web Services; Module 16 - Project Management Services; Module 17 - Change Management Services; Module 18 - Knowledge Transfer Services; or Module 20 - Whole of Government Requirements specify whether the Parties regard the relevant Services as being: • the supply of a service of the same type on a periodic basis, and so are to be classified as Recurring Services for the purpose of the limitation of liability; or • provided in respect of a specific project where the Contractor has been engaged by a Customer to produce, create or deliver a specified outcome or solution that may be subject to Acceptance Testing, in which case the Services are to be classified as Non-Recurring Services for the purpose of the limitation of liability. **(See definition of Non-Recurring Services and Recurring Services in Part 3)**	The Services being providing under the Customer Contract will be Non-Recurring Services.
Specify the alternative cap of liability (clause 18.3):	Subject to any exception in Part 2 of the Customer Contract or Additional Conditions, the Contractor's liability in contract (including under an indemnity), tort (including negligence), breach of statutory duty or otherwise in respect of any loss, damage or expense arising out, of or in connection with, the Customer Contract will not exceed 2 times the Contract Price as set out in the PIPP from time to time.

Item 40 Performance Management Reports

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Reporting (clause 21.1)	
Specify the reports required, (if any), the time for provision and the agreed format:	As specified in the PIPP.

Item 41 Dispute Resolution

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Dispute Resolution (clause 24.11)	
Specify the threshold amount in AU$ for issues to be resolved by expert determination under clauses 24.7 to 24.8.	$50,000.00
Specify type of issue/s not to be determined by expert determination under clauses 24.7 to 24.8.	Subject to clause 24.11(a), all disputes arising out of or in connection with the Customer Contract are to be determined by expert determination under clauses 24.7 to 24.8.

Item 42 Termination for Convenience

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Termination for Convenience by the Customer (clause 25.4)	
Specify whether an amount is payable under clause 25.4(b) if the Customer exercises its right of termination for convenience under clause 25.3:	Clause 39 of the Additional Conditions specifies the costs that are recoverable under clause 25.4(b).

Item 43 Additional Conditions

Details to be included from the Customer Contract	Order Details agreed by the Contractor and the Customer
Specify any Additional Conditions: Note: where the Customer Contract is made under a Head Agreement the Customer must obtain the Contract Authority's and the Director General's NSW Department of Finance and Services consent where an Additional Condition varies a Protected Clause.	Yes. The Additional Conditions are set out in Annexure A to the Customer Contract.

This General Order Form is part of the Customer Contract and incorporates all Parts, terms and conditions and other documents listed in clause 3.8 of Part 2 as if repeated in full in this General Order Form.

SIGNED AS AN AGREEMENT

Signed for and on behalf of Sydney Trains (ABN 38 284 779 682)

By [*to be inserted by the Customer*] but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

Schedule 2 : Agreement Documents

Itemise all documentation (including any supplemental terms and conditions agreed to by the Customer, accepted tenders, offers or quotes from the Contractor, and any letter of acceptance or award issued by the Customer) between the Customer and the Contractor. All such documentation must be itemised in this Schedule 2 and listed below in descending date order (i.e. the latest document is listed first.)

Document	R1 REM Version Document	R1 REM Date of Document	R2 CIMS Version Document	R2 CIMS Date of Document	R1-T2 Version of Document	R1-T2 Date of Document
All Requirements (as defined in the PIPP) referenced or set out in the PIPP from time to time.						
Detailed Design Deliverables:						
High Level Solution Design	3.0	13/01/2016	3.0	5/08/2016	As per R1	
Architecture Specification	5.0	13/01/2016	2.0	15/07/2016	8.1	
Functional Specification	6.0	12/01/2016	1.1	23/08/2016	9.1	
Non-Functional Design	6.0	3/02/2016	3.2	15/08/2016	8.6	
Integration Specification	5.0	20/02/2016	1.0	14/07/2016	6.2	
Project Communication Plan	4.0	30/11/2015	v1.5.2	29/06/2016	As per R1	
Data Management Plan	6.0	10/02/2016	1.0	13/07/2016	6.1	
Data Technical Analysis Outputs	6.0	5/02/2016			7.01	
Updated Technology Implementation Strategy	5.0	18/01/2016	3.0	13/07/2016	5.3	
Technology Implementation Plan (Template)	3.0	3/02/2016	1.0	10/08/2016	4.0	
Technology Test Strategy	6.1	4/02/2016	3.1	23/08/2016	As per R1	
Updated Project Management Plan	4.0	4/02/2016	3.0	3/08/2016	5.0	
RACI	V2.00	1/02/2016	v1.0-2	25/05/2016	6.0	
Updated Product Gap Analysis	3.0	13/01/2016	1.1	23/08/2016	5.01	
System Test Plan	N/A	N/A				
Requirements Traceability Matrix	4.0	13/01/2016	3.5	23/08/2016	6.0	
Technology Environment Management Strategy	9.0	13/01/2016	10.0	16/06/2016	10.5	
Operating Model	1.0	24/02/2016			5.0	
Draft recommended ROC organisational structure					3.0	

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Change Impact Analysis	3.0	13/01/2016			3.0	
Training Needs Analysis	V 1.1	2/02/2016			3.0	
High Level Solution Design Deliverables Acceptance Notice	20140417					
MS Interfaces Rev 2.3	20150303					
REM ER Diagram V32000 20150122 8	20150303					
Implementation Strategy Frequentis R20 V10	20150310		3.0	13/07/2016		
PMP R10 V10	20150310					
Extended Product Capabilities R20 V10	20150320					
High Level Solution Design R20 V10	20150320					
IMS Interfaces 2014 00754 R20 V10	20150320					
IMS OptionPaper Comms 2014 00754 R20 V10	20150320					
IMS OptionPaper UserInterface 2014 00754 R20 V10	20150320					
PMP 2014 00754 R20 V10	20150320					
REM Masterdata 2014 00754 R20 V10	20150320					
REM Roles User Cases 2014 00754 R20 V10	20150320					
Support Plan 2014 00754 R20 V10	20150320					
Training Plan REM 2014 00754 R10 V10	20150320					
Frequentis Clarification and Defects List 2014 00754 R20 V10	20150323					
Frequentis Response to Rail Operations Centre (ROC) Technology Solution Request For Proposal No WS178494	20140825					
Rail Operations Centre (ROC) Technology Solution Request For Proposal No WS178494	20140707					

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Schedule 3: Service Level Agreement

The Parties shall negotiate the Service Level Agreement as part of future negotiations.

Schedule 4: Variation Procedures

1. Procedures

1.1 Each request or recommendation for a change to the PIPP or any part of the Customer Contract must be submitted in a form substantially similar to the Change Request form attached to this Schedule.

1.2 For each draft Change Request submitted:

(a) the Customer must allocate it with a sequential number;

(b) the draft Change Request must be logged and its progress documented by recording its status from time to time by the Contractor as follows:

(i) requested;

(ii) under evaluation;

(iii) awaiting authorisation;

(iv) cancelled;

(v) pending;

(vi) approved/authorised;

(vii) expired;

(viii) in progress;

(ix) applied;

(x) delivered;

(xi) accepted.

1.3 The Party receiving the draft Change Request must within 5 Business Days of receipt (or such longer period set out in the Change Request):

(a) request further information;

(b) provide written notification to the other Party of its approval or rejection of the Change Request.

1.4 If the Customer submits a draft Change Request to the Contractor, and the Contractor believes that there is more than 1 Business Day's work involved in the evaluation of the Change Request, then prior to commencing work on evaluating the draft Change Request the Contractor may request that the Customer pays for the work involved to evaluate the draft Change Request. The Customer may then either revise the draft Change Request to require less than 1 Business Day's work to evaluate it, or agree to pay for the Contractor's work to evaluate the Change Request in an amount agreed by the Parties, or in absence of agreement, at the Contractor's then current commercial rates.

1.5 If the Customer Contract has been entered into under a Head Agreement, and the Change Request seeks to vary a Protected Clause and the Customer approves of the Change Request, the Customer must submit the Change Request to the Contract Authority and the Director General, NSW Department of Finance and Services, for approval immediately after it has notified the Contractor that it approves the Change Request.

2. Status

2.1 A Change Request is binding on the Parties only when both Parties have signed it. Once signed by both parties the Change Request updates the Customer Contract in accordance with the terms of the Change Request. The Contractor must not implement any draft Change Request until the Customer has signed the Change Request form.

3. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number		*Insert Change Request Number (supplied by the Customer)*
Date of Change Request		*Insert date of draft Change Request*
Originator of need for Change Request		*Customer or Contractor*
Proposed Implementation Date of Change		*Insert proposed date of implementation*
Date of expiry of validity of Change Request		*Insert validity expiry date. The Change Request is invalid after this date.*
Contractor's estimated time and cost of evaluation		*Insert estimated time and cost of evaluation*
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**		*Insert amount to be paid to the Contractor for evaluating the draft Change Request*

CHANGE REQUEST HISTORY LOG

Change Request Version History			
Date	**Issue Version**	**Status/Reason for New Issue**	**Author**
Insert date	*Insert version*	*Insert status/reason*	*Insert author*

DETAILS OF CHANGE REQUEST

Summary

[Insert a summary of the changes, if required]

SCOPE

[Insert changes to the scope of Products to be provided and/or any Services, including any extensions to the Contract Period.]

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

[Insert any changes to the Contract Specification]

EFFECT OF CHANGE ON PROJECT TIMETABLE

[Insert changes to the project timetable]

New PIPP (annexed)

[Annex new PIPP if required]

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

[Insert new charges and the timing of payment into the new PIPP]

CHANGES TO CSI

[Insert any changes to the CSI]

CHANGES TO CUSTOMER PERSONNEL

[Insert any changes to the Customer's Personnel]

CHANGES TO CUSTOMER ASSISTANCE

[Insert any changes to the Customer's Assistance]

PLAN FOR IMPLEMENTING THE CHANGE

[insert the plan for implementing the change – if any.]

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

[Insert the responsibilities of the respective Parties for implementing the change – if any.]

Responsibilities of the Contractor

[Insert the responsibilities of the Contractor for implementing the change – if any.]

Responsibilities of the Customer

[insert the responsibilities of the Customer for implementing the change – if any.]

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

[Insert if there will be any effect on the Acceptance Testing of any Deliverable – or alternatively insert None.]

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

[Insert if there will be any effect on performance of any Deliverable – or alternatively insert None.]

EFFECT ON USERS OF THE SYSTEM/SOLUTION

[Insert if there will be any effect on users of the system/solution – or alternatively insert None.]

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Changes will be required to the following documents:

[Add any other documents which may be affected.]

EFFECT ON TRAINING

Insert if there will an effect on training or alternatively insert None.]

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

[insert if there are any other matters.]

ASSUMPTIONS

The plan for implementing the changes outlined in this Change Request is based on the assumptions listed below:

[Insert any assumptions. If none then this section will be deleted].

If the assumptions are or become untrue, the Parties will address the effect of this through a subsequent Change Request.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

[Insert a list of the documents that form part of this Change Request]

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

[Insert amendments to clauses in the Customer Contract, relevant Schedules including Service Level Agreement]

Note that variations to any of the Protected Clauses require the Customer to obtain the Contract Authority's and the Director General, NSW Department of Finance and Services approval (clause 26.2))

AUTHORISATION

The Contractor must not commence work on the Change Request until is signed by both Parties. Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative*] but not so as to incur personal liability

Signature of Customer Representative

Print name

Date

Signed for and on behalf of Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

Print name

Date

Schedule 5: Escrow Deed

Deed dated the _____ day of _____ 20 _____

Between [insert name, and ACN/ABN, if applicable] ("**Escrow Agent**")

_____

And [insert name, and ACN/ABN if applicable] ("the **Contractor**")

_____

And [insert name of Company that owns the IP] ("the **Owner**") [Frequentis AG]

_____

And [insert name of Government Party] ("the **Principal**")

_____

RECITALS

A. By License Agreement made on the ……. day of 201[ ], the Contractor (an affiliated company of the Owner) has agreed to grant a licence to the Principal to use the Licensed Software.

B. By the Support Agreement made on the ……. day of 201[ ], the Contractor has agreed to provide Software Support Services to the Principal in respect of that Licensed Software.

C. Owner (or its parent company) has guaranteed or intends to guarantee the performance obligations of the Contractor under the License Agreement and the Support Agreement as per the Performance Guarantee.

D. The Contractor, Owner and the Principal have agreed to appoint an escrow agent and the Escrow Agent has agreed to act as an escrow agent and to hold the Escrow Material for the Licensed Software on the following terms and conditions.

NOW THIS DEED WITNESS:

1. Agreed Terms and Interpretation

1.1 In this Deed the following words have the following meaning:

Business Day means any weekday that is not a public holiday in New South Wales;

Contract Specifications has the same meaning as in the License Agreement;

Deed means this Deed of Agreement;

Defect means a defect, error or malfunction in that software such that the Licensed Software does not comply with and cannot be used in accordance with the Contract Specifications;

Escrow Fees means the fees set out in Attachment 1 to this Deed;

Escrow Materials means the source code and/or object code of the Licensed Software and all other software programs as owned by the Owner and licensed through the Contractor and as needed to use or maintain the Licensed Software, documentation, drawings and plans as well as a list of any third party software programs that would enable a competent programmer skilled in the use of the Licensed Software and any necessary development tools to keep the Licensed Software in good order and repair that are stated in Attachment 3;

Insolvency Event means that the Owner:

(a) stops or suspends or threatens to stop or suspend payment of all or a class of its debts;

(b) is insolvent with the meaning of Section 95A of the Corporations Act 2001 (Cth);

(c) must be presumed by a court to be insolvent by reason of an event set out in Section 459C(2) of the Corporations Act 2001 (Cth);

(d) fails to comply with a statutory demand within the meaning of Section 459F(1) of the Corporations Act 2001 (Cth);

(e) has an administrator, liquidator or bankruptcy trustee appointed or any step preliminary to the appointment of an administrator, liquidator or bankruptcy trustee is taken;

(f) has a mortgagee enter into possession of any property of that party;

(g) has a controller within the meaning of the Section 9 of the Corporations Act 2001 (Cth) or similar officer or appointed to all or any of its property;

(h) has proceedings commenced, a resolution passed or proposed in a notice of meeting, an application to, or order of, a court made or other steps taken against or in respect of it (other than frivolous or vexatious applications, proceedings, notices or steps) for its bankruptcy, winding up, deregistration or dissolution or for it to enter an arrangement, compromise or composition with or assignment for the benefit of its creditors, a class of them or any of them, insofar as such action or event is related to the insolvency of the Owner; or

(i) an event as above in accordance with the laws of the country of incorporation of the Owner, insofar as such action or event is related to the insolvency of the Owner.

Or any of the above events occurs in relation to the Contractor and the Owner (or its parent company) does not continue to perform the obligations of the Contractor under the Licence Agreement to the reasonable satisfaction of the Principal;

License Agreement means the Customer Contract entered into under the *Procure IT Framework* dated [insert date] pursuant to which the Contractor is providing Licensed Software to the Principal referred to in Recital A;

Licensed Software means the software provided by the Contractor to the Customer and includes any Updates or New Releases of that software that may be provided to the Customer from time to time in accordance with the Software Support Agreement. For the purpose of this Escrow Deed and without affecting the License Agreement, Licensed Software does not include third party owned software or commercially available of-the-shelf third party software;

New Release means software which has been produced primarily to extend, alter or improve the Licensed Software by providing additional functionality or performance enhancement (whether or not Defects in the software are also corrected) while still retaining the original

designated purpose of the Licensed Software to the extent it has been delivered to the Principal;

Performance Guarantee means the Performance Guarantee entered into by the Owner (or its parent company) and the Principal under the *Procure IT Framework* dated [insert date];

Software Support Services means the services to be provided by the Contractor under the Support Agreement;

Support Agreement means the Customer Contract entered into under the *Procure IT Framework* dated [insert date] pursuant to which the Contractor is providing Software Support Services to the Principal in respect of Licensed Software referred to in Recital A; and

Update means software which has been produced primarily to overcome Defects in, or to improve the operation of, the Licensed Software without significantly altering the Contract Specifications whether or not the Licensed Software has also been extended, altered or improved by providing additional functionality or performance enhancement.

1.2 In this Deed, unless the contrary intention appears:

(a) monetary references are references to Australian currency;

(b) the clause and sub clause headings are for convenient reference only and have no effect in limiting or extending the language of the provisions to which they refer;

(c) a cross reference to a clause number is a reference to all its sub clauses;

(d) words in the singular number include the plural and vice versa;

(e) the words “include(s)” and “including” are not words of limitation;

(f) words importing a gender include any other gender;

(g) a reference to a person includes a partnership and a body whether corporate or otherwise;

(h) a reference to a clause or sub clause is a reference to a clause or sub clause of this Deed;

(i) a reference to an Attachment is a reference to an Attachment to this Deed; and

(j) where a word or phrase is given a particular meaning, other parts of speech and grammatical forms of that word or phrase have corresponding meanings.

1.3 Where an obligation is imposed on a party under this Deed, that obligation shall include an obligation to ensure that no act, error or omission on the part of that party’s employees, agents or subcontractors or their employees or agents occurs which will prevent the discharge of that party’s obligation.

COMPLIANCE WITH CONSUMER LAWS

1.4 To the extent that the provisions of the Competition and Consumer Act 2010 (Cth) (CCA) apply to goods or services supplied under this Customer Contract, then the provisions of this Customer Contract are subject to the provisions of the CCA.

1.5 To the extent that there is a failure to comply with a guarantee under sections 54 to 59 of the CCA in respect of goods which are not goods of a kind that are ordinarily acquired for personal, domestic or household use or consumption, then to the extent permitted by law, the

Contractor and the Owner's liability is limited to one or more of the following, at the election of the Contractor or the Owner as the case may be:

(a) the replacement of the goods or the supply of equivalent goods;

(b) the repair of the goods;

(c) the payment of the cost of replacing the goods or of acquiring equivalent goods;

(d) the payment of the cost of having the goods repaired.

1.6 To the extent that there is a failure to comply with a guarantee in respect of the supply of services under sections 60 to 62 of the CCA, then to the extent permitted by law, the Contractor or the Owner's liability is limited to one or more of the following, at the election of the Contractor or the Owner as the case may be:

(a) supplying the services again; or

(b) payment of the cost of having the services supplied again.

2. Duration

Subject to all applicable fees under this Deed being paid by the Principal in accordance with this Deed, this Deed remains in force until the Escrow Material is released in accordance with this Deed or this Deed is terminated or expires in accordance with its terms.

3. Appointment of Escrow Agent

The Escrow Agent is hereby appointed jointly by the Principal and the Owner to hold the Escrow Material and, if the conditions for release under clause 8 below are met, to release the Escrow Material in accordance with this Deed.

4. Owner's Obligations

4.1 The Owner shall deliver to, and deposit with, the Escrow Agent one copy of the Escrow Material within 7 days of the date of this Deed (or such other time as otherwise agreed).

4.2 The Owner shall maintain, amend, modify, up-date and enhance the Escrow Material quarterly and shall ensure on a quarterly basis that the Escrow Material deposited with the Escrow Agent is kept fully up-to date and accurately reflects the Licensed Software including all modifications, amendments, Updates and New Releases made to, or in respect of, the Licensed Software.

4.3 The Owner warrants to the Principal that the Escrow Material is, to the best of the knowledge of the Owner, free from any virus or program device which would prevent the Licensed Software from conforming with the Contract Specifications or which would prevent or impede a thorough and effective verification thereof.

4.4 For the avoidance of doubt, Contractor may fulfil Owner's obligations with similar discharging affect.

5. Escrow Agent's Obligations

5.1 The Escrow Agent shall accept custody of the Escrow Material on the date of delivery in accordance with clause 4.1 above and, subject to the terms and conditions of this Deed, shall hold the Escrow Material on behalf of the Principal and the Owner.

5.2 The Escrow Agent shall take all reasonable necessary steps to ensure the preservation, care, maintenance, safe custody and security of the Escrow Material while it is in the possession, custody or control of the Escrow Agent, including storage in a secure receptacle and in an atmosphere which does not harm the Escrow Material or in a secure electronic environment.

5.3 The Escrow Agent shall bear all risks of loss, theft, destruction of or damage to the Escrow Material while it is in the Escrow Agent's possession, custody or control where such loss, theft, destruction or damage is caused by negligent, malicious, reckless or unlawful act or omission of the Escrow Agent, its employees or agents.

5.4 If the Escrow Material is lost, stolen, destroyed or damaged while it is in the possession, custody or control of the Escrow Agent, the Escrow Agent shall immediately notify the Principal and the Owner.

5.5 Unless this Deed is terminated in accordance with clause 9.2(b) below, the Owner shall, upon receipt of notice from the Escrow Agent under clause 5.4 above, promptly deposit a replacement copy of the Escrow Material with the Escrow Agent.

5.6 Without limiting any other rights the Owner and the Principal may have under this Deed or at law, where the loss, damage or destruction of the Escrow Material is caused by the negligent, malicious, reckless or unlawful act or omission of the Escrow Agent, the Escrow Agent must reimburse the Owner for the reasonable cost of depositing a replacement copy of the Escrow Material.

5.7 The Escrow Agent is not obliged to determine the nature, completeness or accuracy of the Escrow Material lodged with it.

5.8 To the extent permitted by law, the Escrow Agent's liability, to both the Principal, the Contractor and the Owner collectively, in contract (including under an indemnity), tort (including negligence), breach of statutory duty or otherwise in respect of any loss, damage or expense arising out, of or in connection with, this Deed shall not exceed in aggregate for all claims that arise out, of or in connection with, this Deed the greater of:

(a) $100,000; or

(b) two times the Escrow Fees paid, or due and unpaid, in the year that the claim first arises.

6. Escrow Fee and Expenses

6.1 The Principal shall pay all applicable Escrow Fees plus any applicable GST to the Escrow Agent.

6.2 All expenses and disbursements incurred by the Escrow Agent in connection with this Deed shall be borne wholly and completely by the Escrow Agent.

6.3 All expenses and disbursements incurred by the Contractor or the Owner in connection with this Deed shall be borne wholly and completely by the Contractor or the Owner.

7. Testing and Verification

7.1 The Principal may engage the Escrow Agent or an independent assessor to undertake analysis and tests of the Escrow Material for verification purposes on its behalf.

7.2 The Escrow Agent shall release the Escrow Material to the independent party upon presentation of a release form signed by the Principal and the Owner specifying the material to be released and identifying the person to whom that material may be released.

7.3 The Escrow Material released pursuant to clause 7.2 above must be returned to the Escrow Agent or its employees or agents and the Principal shall ensure that the confidentiality of the Escrow Material so released is preserved and that it is not used for any purpose other than the verification that the Owner has complied with its obligations under this Deed.

7.4 All costs that Escrow Agent incurs in assisting the assessment shall be borne by the Principal, and must be paid within 7 days of receipt of an invoice from the Escrow Agent.

8. Release of the Escrow Material

8.1 The Escrow Agent shall not release, or allow access to, the Escrow Material except in accordance with the provisions of this Deed.

8.2 If:

(a) an Insolvency Event has occurred in relation to the Owner; or

(b) the Contractor has breached the Support Agreement or an Insolvency Event has occurred in relation to the Contractor, then the Principal may notify the Owner in writing that it requires the Owner under the Performance Guarantee to step-in and perform the obligations of the Contractor under the Support Agreement or the License Agreement (as applicable). The Owner must within 5 Business Days of receiving the Principal's notice, provide the Principal with written notice that it will perform the obligations of the Contractor in accordance with the Performance Guarantee. A Trigger Event will occur if:

(i) the Owner fails to provide written notice to the Principal within 5 Business Days as specified above; or

(ii) the Owner fails to comply with the Performance Guarantee,

(each of (a) and (b) being a **Trigger Event**),

and the Principal wishes the Escrow Agent to release the Escrow Material to it, the Principal must provide written notice in the form of a statutory declaration to both the Escrow Agent and the Owner stating which Trigger Event has occurred. If the Owner does not, within 20 Business Days of receiving the notice, rectify the Trigger Event or provide another remedy that is satisfactory to the Principal, the Principal may provide the Escrow Agent with a further statutory declaration confirming that the Owner has not rectified the Trigger Event in the required time or provided another remedy that is satisfactory to the Principal and require the Escrow Agent to immediately release the Escrow Material to the Principal ("**Final Release Notice**"). The Escrow Agent shall release the Escrow Material to the Principal promptly after receiving the Final Release Notice.

8.3 Where:

(a) the License Agreement has been lawfully terminated by the Contractor or the period of license has expired;

(b) the Support Agreement has been lawfully terminated by the Contractor or the period of Software Support Services has expired;

(c) the Principal has agreed to the release;

(d) this Deed is terminated in accordance with clause 9 below; or

(e) the Contractor is not obligated under the Agreement to execute a substantially similar Deed to replace this Deed,

the Escrow Agent shall, upon written request from the Owner, release the Escrow Material to the Owner.

8.4 The Principal:

(a) is granted a limited right to use any Escrow Materials subject to them being released under this Deed:

(iii) for the same usage rights as the Principal has been granted the right to use the Licensed Software under the License Agreement; and

(iv) to correct Defects in the Licensed Software; and

(b) subject to (c), must use the Escrow Materials subject to all the other terms of the License Agreement, as if the Escrow Material is included in the definition of Licensed Software in that License Agreement; and

(c) must keep the Escrow Materials strictly confidential and not disclose them to any person, and must not use them for any purpose other than that referred to in clause 8.5(a) above.

This clause 8 4 survives expiry or termination of this Deed.

9. Termination

9.1 The Escrow Agent may, by giving 3 months prior written notice to the Principal and the Owner, terminate this Deed subject to the pro-rata refund of any advance payment of the Escrow Fee.

9.2 The Principal or the Owner may terminate this Deed immediately if the Escrow Agent:

(a) has become subject to any form of insolvency administration; or

(b) is in breach of any obligation under this Deed so that there is a substantial failure by the Escrow Agent to perform or observe this Deed.

9.3 If this Deed is terminated in accordance with this clause 9 while the Agreement remains in force, and the Principal continues to use the Licensed Software, the Principal and the Owner shall enter into a new escrow agreement on substantially the same terms and conditions as are set out in this Deed, with an alternative escrow agent who is acceptable to both the Principal and the Owner.

9.4 The Principal and the Owner may, upon giving 30 days prior written notice to the Escrow Agent, jointly terminate this Deed, however in this case, no refund of advance payment of the Escrow Fee will be payable by the Escrow Agent.

10. Confidentiality

10.1 The Escrow Agent shall not, except as permitted by this Deed, make public or disclose to any person any information about this Deed or the Escrow Material.

10.2 The Escrow Agent shall not reproduce, or cause to have reproduced, a copy of the Escrow Material or any part thereof, except as may be necessary to electronically store (and maintain a back up) of the Escrow Material.

10.3 The obligations under this clause 10 shall survive the termination of this Deed.

11. Compliance with Laws

11.1 The Escrow Agent shall, in carrying out this Deed, comply with the provisions of any relevant statutes, regulations, by-laws and the requirements of any Commonwealth, State or local authority.

12. Resolution of Disputes

12.1 The parties agree to resolve any conflicts or issues between them in relation to this Deed as follows:

Negotiation

(a) if there is a disagreement between the parties arising out of this Deed (a "Dispute"), then within 10 Business Days of a party notifying the other party or parties of the Dispute, a senior representative from each party must meet and use all reasonable endeavours acting in good faith to resolve the Dispute by joint discussions.

Mediation

(b) If the Dispute is not settled within 10 Business Days of notification under clause 12.1(a), the parties must submit the Dispute to mediation administered by one of the following bodies as agreed by the parties:

(i) the Australian Commercial Disputes Centre Limited (**ACDC**);

(ii) the Institute of Arbitrators and Mediators Australia (**IAMA**); or

(iii) Lawyers Engaged in Alternative Dispute Resolution (**LEADR**); or

failing agreement, the ACDC.

(c) The mediator will be an independent person agreed between the parties or, failing agreement, a mediator will be appointed by the President of the body determined under clause 12.1(b) above.

(d) Any mediation meetings and proceedings under this clause 12.1 must be held in Sydney, New South Wales.

Court proceedings and other relief

(e) A party may not start court proceedings in relation to a Dispute until it has followed the procedures in this clause 12.1 but the parties have not agreed a resolution within 30 Business Days of the appointment of the mediator, unless the party seeks injunctive or other interlocutory relief.

Continuation of rights and obligations

(f) Despite the existence of a Dispute, each party must continue to perform this Deed.

13. Applicable Law

This Deed shall be governed by and construed in accordance with the laws from time to time in force in New South Wales. The parties shall submit to the exclusive jurisdiction of the courts of New South Wales.

14. Variation and Waiver

14.1 This Deed shall not be varied either in law or in equity except by a deed duly executed by the Escrow Agent, the Principal, the Owner and the Contractor.

14.2 A waiver by one party of a breach of a provision of this Deed by another party shall not constitute a waiver in respect of any other breach or of any subsequent breach of this Deed. The failure of a party to enforce a provision of this Deed shall not be interpreted to mean that party no longer regards that provision as binding.

15. Assignment

The Contractor, the Owner, the Principal and the Escrow Agent, or any of these, shall not assign, in whole or in part, its benefits under this Deed without the written consent of the other parties, which shall not be unreasonably withheld.

16. Severability

Each provision of this Deed, and each part of it shall, unless the context otherwise necessarily requires it, be read and construed as a separate and severable part, so that if any provision, or part of a provision is void or otherwise unenforceable for any reason, then that provision, or part shall be severed and the remainder shall be read and construed as if the severable part had never existed.

17. Notices

17.1 A notice or other communication is properly given or served if the party delivers it by hand, posts it or transmits a copy electronically (electronic mail or facsimile) to the address last advised by one of them to the other. Where the notice is given or served electronically, the sending party must confirm receipt by some other means. The address for services of notice for a party is, in the case of the:

Escrow Agent

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

Contractor

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

Principal

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

Owner

Physical address:

Postal address:

Phone number:

Fax number:

Email address:

or such other address as a party may notify to the other party in writing from time to time.

17.2 A notice or other communication is deemed to be received if:

(a) delivered by hand, when the party who sent the notice holds a receipt for the notice signed by a person employed at the physical address for service;

(b) sent by post from and to an address within Australia, after three (3) Business Days;

(c) sent by post from or to an address outside Australia, after ten (10) Business Days; or

(d) sent by facsimile, at the time which the facsimile machine to which it has been sent records that the communication has been transmitted satisfactorily (or, if such time is outside normal business hours, at the time of resumption of normal business hours).

EXECUTED AS A DEED

Signed, sealed and delivered by [insert full legal name of Escrow Agent and ACN/ABN]

in accordance with s127 of the *Corporations Act* 2001 (Cth) by:

Signature Director	**Signature of Director/Secretary**
Print name	**Print name**
Date	**Date**

Signed, sealed and delivered by [insert full legal name of Contractor and ACN/ABN]

in accordance with s127 of the *Corporations Act* 2001 (Cth) by:

Signature Director	**Signature of Director/Secretary**
Print name	**Print name**
Date	**Date**

Signed for and on behalf of [insert full legal name of Owner and ACN/ABN]

[***Note: Execution clause to be confirmed.***]

By a duly authorised representative in the presence of:

Signature of authorised representative	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Signed, sealed and delivered by [insert full legal name of Principal and ACN/ABN]

in accordance with s127 of the *Corporations Act* 2001 (Cth) by:

Signature Director	**Signature of Director/Secretary**
Print name	**Print name**
Date	**Date**

Escrow Deed of Agreement

ATTACHMENT 1

Details of Escrow fees:

1 REVIEW OF FEES

Escrow Deed of Agreement

ATTACHMENT 2

Details of licensed software to be held in Escrow

Source Code:	
Flow Charts:	
Diagrams:	
Listings:	

Escrow Deed of Agreement

ATTACHMENT 3

Supporting materials

Insert details of support material relevant to the Licensed Software, for example:

- technical documentation sufficient to allow a competent computer programmer to understand and maintain the version of the software to which the documentation relates.
- relevant maintenance tools and compilers and assemblers (if standard tools, description thereof will suffice) and third party software utilities.
- description of code generation.
- description of third party software required for support and availability thereof.
- identification of key personnel involved with the development of the software.
- operational manuals, listings, flow charts etc.
- details of machine/processor/system configuration.

Schedule 6 : Deed Poll – Approved Agents

Not applicable

Schedule 7: Statutory Declaration – Subcontractor

Oaths Act (NSW), 1900 Ninth Schedule

I, _____ do solemnly and sincerely declare that to the best of my knowledge and belief:

1. CNS - Solutions & Support GmbH (**Subcontractor**) has been selected as subcontractor to, Frequentis Australasia Pty Ltd ABN 25 107 550 489 (**Contractor**) under an agreement between the Sydney Trains (ABN 38 284 779 682) (**Customer**) and the Contractor dated [*insert date of Customer Contract*].

2. The Subcontractor will offer to enter into an agreement with the Contractor in connection with the Customer Contract on terms that are not inconsistent with the terms of the Customer Contract in so far as those terms are relevant to the Subcontractor.

3. As at the date of this Statutory Declaration there are no reasons of which I am aware that would prevent the Subcontractor's agreement with the Contractor from being performed in a manner that would allow the satisfactory and timely performance of that subcontract.

And I make this solemn declaration, as to the matter aforesaid according to the law in this behalf made, and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Declared at _____

the _____ day of _____ 20 _____

Before me, _____

Schedule 8: Deed of Confidentiality

Deed of Agreement dated the _____ day of _____ 20 _____

Between Sydney Trains (ABN 38 284 779 682) (**Customer**)

And CNS - Solutions & Support GmbH (**Subcontractor**)

RECITALS

(A) In the course of the Subcontractor assisting in the supply by the Contractor of certain Deliverables for the Customer under a subcontract agreement between the Subcontractor and the Contractor, the Subcontractor will have access to, and may become aware of, Confidential Information belonging to, or in the possession of, the Customer.

(B) Improper use or disclosure of the Confidential Information would severely damage the Customer's ability to perform its governmental/statutory functions and would severely damage the commercial interests of the Customer.

(C) The Customer requires, and the Subcontractor agrees, that it is necessary to take all reasonable steps (including the execution of this Deed) to ensure that the Customer's Confidential Information is kept confidential.

(D) This Deed sets out the terms on which the Subcontractor will have access to the Confidential Information.

WHAT IS AGREED

1. Recitals

The Parties acknowledge the truth and accuracy of the Recitals.

2. Interpretation

DEFINITIONS

2.1 In the interpretation of this Deed unless a contrary intention appears the following expressions will have the following meanings:

Agreement means the Customer Contract entered into under the *Procure IT Framework* between the Contractor and the Customer under which the Contractor will supply Deliverables to the Customer dated [insert date].

Business Day means any day that is not a Saturday, Sunday or a public holiday in New South Wales.

Confidential Information means information that:

(a) is by its nature confidential; or

(b) is communicated by the Customer to the Subcontractor as confidential; or

(c) the Subcontractor knows or ought to know is confidential; or

(d) relates to:

(i) the Products and Services;

(ii) the financial, the corporate and the commercial information of the Customer;

(iii) the affairs of a third party (provided the information is non-public); and

(iv) the strategies, practices and procedures of the State and any information in the Subcontractor's possession relating to the State public service,

but excludes any information which the Subcontractor can establish was:

(v) in the public domain, unless it came into the public domain due to a breach of confidentiality by the Subcontractor or another person;

(vi) independently developed by the Subcontractor; or

(vii) in the possession of the Subcontractor without breach of confidentiality by the confidant or other person.

Contractor means Frequentis Australasia Pty Ltd (ABN 25 107 550 489).

Deliverables means any product or service and any associated material offered for supply or provided by the Contractor in accordance in the Agreement.

Express Purpose means the Subcontractor performing the obligations under its subcontract agreement with the Contractor.

Intellectual Property Rights means all intellectual property rights including:

(a) copyright, patent, trademark, design, semi-conductor or circuit layout rights, registered design, trademarks or trade name and other protected rights, or related rights, existing worldwide; and

(b) any licence, consent, application or right, to use or grant the use of, or apply for the registration of, any of the rights referred to in (a),

but does not include the right to keep confidential information confidential, moral rights, business names, company names or domain names.

Notice means notice in writing given in accordance with this Deed.

State means the State of New South Wales.

GENERAL

2.2 Headings are for convenience only, and do not affect interpretation. The following rules also apply in interpreting this Deed, except where the context makes it clear that a rule is not intended to apply

2.3 A reference to:

(a) legislation (including subordinate legislation) is a reference to that legislation as amended, re-enacted or replaced ,and includes any subordinate legislation issued under it;

(b) a document or agreement, or a provision of a document or agreement, is a reference to that document, agreement or provision as amended, supplemented, replaced or novated;

(c) a person includes any type of entity or body of persons whether or not it is incorporated or has a separate legal entity;

(d) anything (including a right, obligation or concept) includes each part of it.

2.4 If this Deed expressly or impliedly binds more than one person then it shall bind each such person separately and all such persons jointly.

2.5 A singular word includes the plural, and vice versa.

2.6 A word which suggests one gender includes the other gender.

2.7 The words “include(s)” and “including” are not words of limitation.

2.8 If a word is defined, another part of speech of that word has a corresponding meaning.

3. Non disclosure

3.1 The Subcontractor must not disclose the Confidential Information to any person without the prior written consent of the Customer.

3.2 The Customer may grant or withhold its consent in its discretion.

3.3 If the Customer grants its consent, it may impose conditions on that consent, including a condition that the Subcontractor procures the execution of a Deed in these terms by the person to whom the Subcontractor proposes to disclose the Confidential Information.

3.4 If the Customer grants consent subject to conditions, the Subcontractor must comply with those conditions.

3.5 Despite clause 3.1, the Subcontractor may disclose the Confidential Information:

(a) to its directors, officers, employees and contractors;

(b) to the Contractor and its directors, officers, employees and the Contractor’s other contractors who are engaged in the supply of the Deliverables and their directors, officers, employees,

each referred to as **permitted recipients**, where such disclosure is essential to carrying out their duties in respect of the Express Purpose.

3.6 Despite clause 3.1, the Subcontractor may disclose the Confidential Information:

(a) to its lawyers, accountants, insurers, financiers and other professional advisers where the disclosure is in connection with advising on, reporting on, or facilitating the performance under this Deed; or

(b) if the Subcontractor is required to disclose by law, order of a court or tribunal of competent jurisdiction or the listing rules of an applicable securities exchange.

3.7 Before disclosing the Confidential Information to a permitted recipient, the Subcontractor will ensure that the permitted recipient is aware of the confidentiality requirements of this Deed and is advised that it is strictly forbidden from disclosing the Confidential Information or from using the confidential information other than as permitted by this Deed.

3.8 The Confidential Information must not be copied or reproduced by the Subcontractor or the permitted recipients without the expressed prior written permission of the Customer, except as for such copies as may be reasonably required for the Express Purpose.

3.9 If any person, being any director, officer, contractor or employee of the Subcontractor, who has had access to the Confidential Information in accordance with this clause 3 leaves the service or employ of the Subcontractor then the Subcontractor will procure that that person does not do or permit to be done anything which, if done or permitted to be done by the Subcontractor, would be a breach of the obligations of the Subcontractor under this Deed.

4. Restriction on use

4.1 The Subcontractor must use the Confidential Information only for the Express Purpose and must not without the prior written consent of the Customer use the Confidential Information for any purpose other than the Express Purpose.

4.2 The Subcontractor must, unless otherwise authorised by the prior written consent of the Customer:

(a) treat as confidential and secret all of the Confidential Information which the Subcontractor has already acquired or will acquire from the Customer;

(b) take proper and adequate precautions at all times and enforce such precautions to preserve the confidentiality of the Confidential Information and take all necessary action to prevent any person obtaining access to the Confidential Information other than in accordance with this Deed;

(c) not directly or indirectly use, disclose, publish or communicate or permit the use disclosure, publication or communication of the Confidential Information to any person other than in accordance with this Deed;

(d) not copy or disclose to any person in any manner any of the Confidential Information other than in accordance with this Deed; and

(e) ensure that the permitted recipients comply with the terms of this Deed and keep the Confidential Information confidential and not use or disclose the Confidential Information other than as permitted by this Deed.

5. Survival

5.1 This Deed will survive the termination or expiry of the Agreement for a period of 6 years.

6. Rights of the Customer

PRODUCTION OF DOCUMENTS

6.1 The Customer may demand the delivery up to the Customer of all documents in the possession or control of the Subcontractor containing the Confidential Information.

6.2 The Subcontractor must immediately comply with a demand under this clause 6.

6.3 If the Customer makes a demand under this clause 6, and documents containing the Confidential Information are beyond the Subcontractor's possession or control, then the Subcontractor must provide full particulars of the whereabouts of the documents containing the Confidential Information, and the identity of the person in whose possession or control they lie.

6.4 In this clause 6, "documents" includes any form of storage of information, whether visible to the eye or not.

LEGAL PROCEEDINGS

6.5 The Customer may take legal proceedings against the Subcontractor or third parties if there is any actual, threatened or suspected breach of this Deed, including proceedings for an injunction to restrain such breach.

7. Indemnity and release

7.1 The Subcontractor is liable for, and agrees to indemnify and keep indemnified the Customer in respect of, any claim, damage, loss, liability, cost, expense, or payment which the Customer suffers or incurs as a result of:

(a) a breach of this Deed (including a breach of this Deed which results in the infringement of the rights of any third party); or

(b) the disclosure or use of the Confidential Information by the Subcontractor or the permitted recipients other than in accordance with this Deed.

8. No exclusion of law or equity

This Deed does not exclude the operation of any principle of law or equity intended to protect and preserve the confidentiality of the Confidential Information.

9. Waiver

9.1 No waiver by the Customer of one breach of any obligation or provision of this Deed will operate as a waiver of another breach of any other obligation or provision of this Deed.

9.2 None of the provisions of this Deed will be taken to have been varied waived discharged or released by the Customer unless by its express consent in writing.

10. Remedies cumulative

CUMULATIVE

10.1 The rights and remedies provided under this Deed are cumulative and not exclusive of any other rights or remedies.

OTHER INSTRUMENTS

10.2 Subject to the other covenants of this Deed, the rights and obligations of the parties pursuant to this Deed are in addition to and do not derogate from any other right or obligation between the parties under any other Deed or agreement to which they are parties.

11. Variations and amendments

No term or provision of this Deed may be amended or varied unless reduced to writing and signed by the parties in the same manner as this instrument.

12. Applicable law

This Deed will be governed and construed in accordance with the laws of the State.

13. Notices

13.1 Notices must be sent to the other party at the address shown in this Deed, or the address last notified to the other party in writing, or in the case of the Subcontractor, at the Subcontractor's registered office.

13.2 All notices must be in writing and signed by the relevant party and must be given either by hand delivery, post or facsimile transmission.

13.3 If delivery or receipt of a notice is not made on a Business Day, then it will be taken to be made on the next Business Day.

EXECUTED AS A DEED

Signed, sealed and delivered by Sydney Trains (ABN 38 284 779 682)

By [*to be inserted by the Customer*] but not so as to incur personal liability

In the presence of: [insert name of witness]

Signature of Customer	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Signed, sealed and delivered by CNS - Solutions & Support GmbH

By [*to be inserted by the Subcontractor*] but not so as to incur personal liability

In the presence of: [insert name of witness]

Signature of Subcontractor	**Signature of Witness**
Print name	**Print name**
Date	**Date**

Schedule 9: Performance Guarantee

Deed dated the _____ day of _____ 20 _____

Between [insert full legal name of the Customer] (Customer)

Sydney Trains (ABN 38 284 779 682)

And [*insert full legal name and any ACN/ABN of the Guarantor*] (Guarantor)

Frequentis AG (ATU14715600)

Purpose: Frequentis Australasia Pty Ltd (ABN 25 107 550 489) (Contractor) has agreed to offer to supply Products and Services to the Customer under a contract dated [*insert date of Customer Contract*] (Customer Contact).

DEFINITIONS

Business Day means any weekday that is not a public holiday in New South Wales.

Insolvency Event means where the Contractor:

(a) stops or suspends or threatens to stop or suspend payment of all or a class of its debts;

(b) is insolvent with the meaning of Section 95A of the *Corporations Act* 2001 (Cth);

(c) must be presumed by a court to be insolvent by reason of an event set out in Section 459C(2) of the *Corporations Act* 2001 (Cth);

(d) fails to comply with a statutory demand within the meaning of Section 459F(1) of the *Corporations Act* 2001 (Cth);

(e) has an administrator, liquidator or bankruptcy trustee appointed or any step preliminary to the appointment of an administrator, liquidator or bankruptcy trustee is taken;

(f) has a mortgagee enter into possession of any property of that Party;

(g) has a controller within the meaning of the Section 9 of the *Corporations Act* 2001 (Cth) or similar officer appointed to all or any of its property; or

(h) has proceedings commenced, a resolution passed or proposed in a notice of meeting, an application to, or order of, a court made or other steps taken against or in respect of it (other than frivolous or vexatious applications, proceedings, notices or steps) for its bankruptcy, winding up, deregistration or dissolution or for it to enter an arrangement, compromise or composition with or assignment for the benefit of its creditors, a class of them or any of them.

Notice in Writing means a notice signed by a party's authorised representative or his/her delegate or agent.

BY THIS DEED

By this Deed, the Guarantor guarantees to the Customer the performance of the obligations undertaken by the Contractor under the Customer Contract on the following terms and conditions:

1. If the Contractor (unless relieved from the performance of the Customer Contract by the Customer or by statute or by a decision of a tribunal of competent jurisdiction) fails to execute and perform its undertakings under the Customer Contract, the Guarantor will, if required to do so by the Customer, complete or cause to be completed the undertakings contained in the Customer Contract.

2. Where the Guarantor consists of more than one legal person each of those persons agree to be bound jointly and severally by this Deed of Guarantee, and the Customer may enforce this Deed of Guarantee against all or any of the persons who constitute the Guarantor.

3. The Guarantor will not be discharged, released or excused from this Deed of Guarantee by an arrangement made between the Contractor and Customer with or without the consent of the Guarantor, or by any alteration, amendment or variation in the obligations assumed by the Contractor or by any forbearance whether as to payment, time, performance or otherwise.

4. The obligations of the Contractor will continue in force and effect until the completion of the undertakings of this Deed of Guarantee by the Guarantor.

5. The obligations and liabilities of the Guarantor under this Deed of Guarantee will not exceed the obligations and liabilities of the Contractor under the Customer Contract.

6. Where the Contractor has failed to perform under the Customer Contract, the obligations of the Guarantor will continue even though the Contractor has been the subject of an Insolvency Event.

7. The rights and obligations under this Deed of Guarantee will continue until all obligations of the Contractor under the Customer Contract have been performed, observed and discharged.

8. A notice under this Deed of Guarantee must be a Notice in Writing.

9. The address for services of Notices in Writing under this Deed of Guarantee for a party is, in the case of the:

Guarantor

Physical address

Postal address

Fax number

Contractor

Physical address

Postal address 10/14 Ashtan Place, Banyo QLD 4014

Fax number

Customer

Physical address

Postal address Level 13, 477 Pitt Street, Sydney NSW 2000

Fax number

Or such other address as a party may notify to the other party in writing from time to time.

10. A Notice in Writing is deemed to be received if:

    (a) delivered by hand, when the party who sent the notice holds a receipt for the notice signed by a person employed at the physical address for service;

    (b) sent by post from and to an address within Australia, after 3 Business Days;

    (c) sent by post from or to an address outside Australia, after 10 Business Days;

    (d) sent by facsimile, at the time which the facsimile machine to which it has been sent records that the communication has been transmitted satisfactorily (or, if such time is outside normal business hours, at 9.00 am the next Business Day).

11. The laws of the New South Wales govern the this Deed of Guarantee and the parties submit to the exclusive jurisdiction of the courts of New South Wales.

EXECUTED BY THE PARTIES AS A DEED AT THE DATE STATED BELOW

Signed, sealed and delivered by [insert name of the Customer].

Sydney Trains (ABN 38 284 779 682)

By [*insert name of Customer representative*]

In the presence of: [*insert name of witness not a party to this Deed*]]

Signature of Customer representative	**Signature of Customer's Witness**
Print Name	**Print Name**
Date	**Date**

Signed, sealed and delivered by [insert name of Guarantor]

Frequentis AG (ATU14715600)

with registered office of:

In the presence of: [*insert name of witness not a party to this Deed*]]

Signature of Guarantor representative	**Signature of Guarantor's Witness**
Print Name	**Print Name**
Date	**Date**

Schedule 10: Performance Security

Deed Poll dated the _____ day of _____ 20 _____

In favour of Sydney Trains ABN 38 284 779 682 (**Customer**)

Level 9 (North Wing)] Sydney Central Building, 477 Pitt Street Sydney New South Wales 2000

Issued by [*insert name and ACN/ABN*] (**Guarantor**)

[insert address]

BY THIS DEED POLL:

1. Frequentis Australasia Pty Ltd (ABN 25 107 550 489) (**Contractor**) has agreed to supply Deliverables to the Customer under a contract dated [insert] between the Contractor and the Customer (**Customer Contract**).

2. The Guarantor irrevocably and unconditionally undertakes to pay to the Customer on their first demand in writing without reference to the Contractor and separate from any notice given by the Contractor to the Guarantor not to pay same, any sum or sums which may from time to time be demanded in writing by the Customer to a maximum aggregate sum of $[insert].

3. Any demand has to be accompanied by the Customer's written notice that the demand has been made in accordance with section 9 of this Performance Security.

4. The Guarantor's liability under this Performance Security will be a continuing liability until the sooner of:

(a) the date payment is made up to the maximum aggregate sum;

(b) the date the Customer notifies the Guarantor that this Performance Security is no longer required; and

(c) [insert].

5. Any demand received at the Guarantor's address after the earlier of the dates specified in clauses 41.1(a), 41.1(b) or 41.1(c) above shall not be honoured.

6. No provision of this Performance Security may be waived, amended, supplemented or otherwise modified except by written notification signed by the Guarantor and the Customer.

7. The Guarantor may at any time, without being required to do so, pay the Customer the maximum aggregate sum or, after having made a part payment of the maximum aggregate sum, the balance outstanding or any lesser amount that the Customer may require and thereupon this Performance Security expires.

8. The Guarantor will deal with this Performance Security in accordance with any applicable anti-money laundering, counter-terrorism financing or economic or trade sanctions laws or regulations.

9. Guarantor acknowledges and agrees that this Deed Poll may be relied upon and enforced by the Customer in accordance with its terms even though the Customer is not a party to it.

10. The laws of New South Wales govern this Performance Security and the parties submit to the exclusive jurisdiction of the courts of New South Wales.

11. A demand, notice or any other communication by the Customer to the Guarantor is properly given or served if it is in writing and duly signed for and on behalf of the Customer and received in original by hand, registered post or courier service, in a letter addressed to the Guarantor, at its below address. Any notice to the Customer is properly given or served if it is in writing signed by or on behalf the Guarantor and is sent by registered post or courier service in a letter addressed to Customer at its below address.

12. The address for services of notice for a party is, in the case of the:

Guarantor

Physical address *[insert]*

Postal address *[insert]*

Customer

Postal address *[insert]*

or such other address as a party may notify to the other party in writing from time to time.

Executed as a deed poll

[Insert execution block for Guarantor.]

[By single attorney]

Signed sealed and delivered for **[insert name of Guarantor]** by their attorney

sign here ► _____

Attorney

print name _____

in the presence of

sign here ► _____

Witness

print name _____

print address _____

[By multiple attorneys]

	Signed sealed and delivered for **[insert name of Guarantor]** by their attorneys

sign here ► _____ _____

Attorney Attorney

print name _____ _____

in the presence of

sign here ► _____ _____

Witness Witness

print name _____ _____

print address _____ _____

[By common seal]

The Common Seal of [*insert Guarantor's name & ACN/ABN*]

was affixed by [*authority of the Board of Directors*]

in the presence of [*insert name of Director/Secretary or other permanent officer*]

in the presence of [*insert name of Director/Secretary or other permanent officer*]

Signature of Director/Secretary **Signature of Director/Secretary**

Print name **Print name**

Date

Schedule 11: Dispute Resolution Procedures

1. Expert Determination

1.1 If a Referral Notice is submitted under clause 24.7 of the Customer Contract, the expert is to be agreed between the Parties. If they cannot agree within 28 days of the Referral Notice, the expert is to be nominated on the application of either Party by the Chief Executive Officer, Australian Commercial Disputes Centre of NSW.

1.2 The expert nominated must be a person who is an experienced Australian legal practitioner or a person with practical experience in the technology that is the subject matter of the dispute, unless otherwise agreed. The expert must not be:

(a) an employee of the Parties;

(b) a person who has been connected with this Customer Contract or has a conflict of interest, as the case maybe; or

(c) a person who the Parties have not been able to agree on.

1.3 The expert may appoint any person that the expert believes will be able to provide the specialists skills that are necessary to make a determination, including an Australian legal practitioner. The expert must consult with both Parties prior to appointing such person.

1.4 When the person to be the expert has been agreed or nominated, the Customer, on behalf of both Parties, must engage the expert by letter of engagement (and provide a copy to the Contractor) setting out:

(a) the issue referred to the expert for determination;

(b) the expert's fees;

(c) the procedure for the determination set out in this Schedule; and

(d) any other matter which is relevant to the engagement.

2. Submissions

2.1 The procedure for submissions to the expert is as follows:

(a) The Party that has referred the issue to expert determination must make a submission in respect of the issue, within 30 Business Days after the date of the letter of engagement referred to in clause 1.4.

(b) The other Party must respond within 30 Business Days after receiving a copy of that submission. That response may include cross-claims.

(c) The Party referred to in clause 2.1(a) may reply to the response, but must do so within 20 Business Days after receiving the response, and must not raise new matters.

(d) The other Party may comment on the reply, but must do so within 20 Business Days after receiving the reply, and must not raise new matters.

(e) The expert must ignore any submission, response, reply, or comment not made within the time given in this clause 2.1, unless the Customer and the Contractor agree otherwise.

(f) The expert may request further information from either Party. The request must be in writing, with a time limit for the response. The expert must send a copy of the request and response to the other Party, and give the other Party a reasonable opportunity to comment on the response.

(g) All submissions, responses, replies, requests and comments must be in writing. If a Party gives information to the expert, it must at the same time give a copy to the other Party.

3. Conference

3.1 The expert must arrange at least one conference with both Parties. The request must be in writing, setting out the matters to be discussed.

3.2 Each Party is entitled to be represented at any preliminary conference before the expert by its legal representatives and other authorised representatives, with information and knowledge of the issues.

3.3 The expert is not bound by the rules of evidence and may receive information in any manner the expert sees fit, but must observe the requirements of procedural fairness. Consultation between the expert and a Party must only take place in the presence of the other Party, unless a Party fails to attend a conference or meeting which has been convened by the expert and of which prior notice has been given. Any Party providing information to the expert must provide that information to the other Party.

3.4 The Parties agree that such a conference is considered not to be a hearing that would give anything under this Schedule the character of arbitration.

3.5 In answer to any issue referred to the expert by a Party, the other Party can raise any defence, set-off or counter-claim.

4. Questions to be determined by the Expert

4.1 The expert must determine for each issue the following questions (to the extent that they are applicable to the issue):

(a) is there an event, act or omission that gives the claimant a right to compensation under the Customer Contract:

(i) for damages for breach of the Customer Contract, or

(ii) otherwise in law?

(b) if so:

(i) what is the event, act or omission?

(ii) on what date did the event, act or omission occur?

(iii) what is the legal right which gives rise to the liability to compensation?

(iv) is that right extinguished, barred or reduced by any provision of the Customer Contract, estoppel, waiver, accord and satisfaction, set-off, cross-claim, or other legal right?

(c) in the light of the answers to clause 4.1:

(i) What compensation, if any, is due from one Party to the other and when did it fall due?

(ii) What interest, if any, is due when the expert determines that compensation?

4.2 The expert must determine for each issue any other questions required by the Parties, having regard to the nature of the issue.

4.3 The Parties must share equally the fees of the expert, any other costs associated with the process, including room hire expenses, transcript expenses and the like and the fees of any person appointed by the expert under clause 1.3 for the determination, and bear their own expenses.

4.4 If the expert determines that one Party must pay the other an amount exceeding the amount specified in General Order Form (calculating the amount without including interest on it and after allowing for set-offs), then either Party may commence litigation, but only within 56 days after receiving the determination.

4.5 Unless a Party has a right to commence litigation or otherwise resolve the dispute under the Customer Contract:

(a) in the absence of a manifest error the Parties must treat each determination of the expert as final and binding and give effect to it; and

(b) if the expert determines that one Party owes the other money, that Party must pay the money within 20 Business Days.

5. Role of Expert

5.1 The expert must:

(a) act as an expert and not as an arbitrator, adjudicator or as expert witness;

(b) make its determination on the basis of the submissions of the Parties, including documents and witness statements, and the expert's own expertise;

(c) act impartially, free of bias and with no vested interest in the outcome of the dispute;

(d) adopt procedures for the Expert Determination suitable to the circumstances of the dispute so as to provide for an expeditious cost effective and fair means for the determination of the dispute; and

(e) issue a certificate in a form the expert considers appropriate, stating the expert's determination and giving reasons, within 45 Business Days after the receipt of the information in clause 2.1(d).

5.2 If a certificate issued by the expert contains a clerical mistake, an error arising from an accidental slip or omission, a material miscalculation of figures, a mistake in the description of any person, matter or thing, or a defect of form, then the expert must correct the certificate and give notice to the Parties of such correction.

6. Confidentiality

6.1 Each Party involved in the expert determination process, including the expert, the Parties, their advisors and representatives shall maintain the confidentiality of the expert determination process and may not use or disclose to anyone outside of the expert determination process, the expert's determination, or any information received or obtained, in the course of the expert determination process, including the existence of that information, except to the extent:

(a) the Parties have otherwise agreed in writing;

(b) the information is already in the public domain;

(c) disclosure is required to a Party's insurers, auditors, accountants or other professional advisers;

(d) disclosure is required for the purposes of any legal proceedings relating to the dispute or the expert's determination; or

(e) disclosure is otherwise required by law.

MODULE ORDER FORM
MODULE 3 – LICENSED SOFTWARE

Box 1 Approved Purpose

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.1)	
Specify what purpose is the Licensed Software used for. If no other purpose is specified in this Box the Approved Purpose is the internal processing of the Customer's own data.	The Approved Purpose includes use of the Licensed Software for the internal processing of the Customer's own data, as well as the data of Transport for NSW, NSW Trains, RailCorp and any NSW Government agency from time to time that owns or operates a rail network.

Box 2 Class of Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.2)	
Specify the specific rights that are granted by the Contractor to the Customer to use the Licensed Software. The Class of Licence defines the Price, e.g. If the Licensed Software is licensed for X "Named Users", the Class of Licence must define what a "Named User" is. Examples of the types of issues that are included in the Class of Licence include: (a) the Licence Period; (b) number and type of user; (c) number, type or capacity of Hardware; or (d) any other licence restriction/right. Also specify whether the Customer is granted the right to transfer the Licensed Software to an outsourcer in accordance with clause 2.17. [Note: If this Box is not completed then the Contractor grants the Customer the default rights to use the Licensed Software and User Documentation as described in clauses 2.2 and 2.9 of	The Licensed Software comprises each of the licenses set out below for REM 2016.R2.and REM Mobile 2016.R2 and (as at the date of Change Request 5) REM 2017.R2 and REM Mobile 2017.R2. The Licence Period is perpetual. **REM Server Licences** Each Instance/Server • ICM Platform Licence - 2 licences (main and backup site) • Application Server Licence – 4 licences (two redundant servers per site) • Web Server Licence - 4 licences (two redundant servers per site) • REM Mobile Server Licence – 4 Licences (two redundant servers per site) **REM Gateway Licences** Each Server/Client • Incident Information Exchange-Gateway - Gateway - 4 licenses (two redundant servers per site) • Email-Gateway - 4 licences (two redundant servers per site) • SMS-Gateway - 4 licences (two redundant servers per site) •

Module 3.]	**REM Extension Licences** Each Instance • Notifications Module – 2 instances • Document Management Module – 2 instances **REM Client and User Licences** Each Working Position/Client/User • Data Management Client – 5 working positions (node locked) • Incident Management Client – 50 working positions (node locked) • Named User – 2200 named users (incident management client/data management client/we client) • REM Mobile Notification Sender App – Up to 500 devices (licenced per device) For Release 1-T2, the Licensed Software also includes the following licences for REM 2017.R2 and REM Mobile 2017.R2: **REM Gateway Licences** • Telephone CTI Gateway – 50 working positions (node locked per client) **REM Client and User Licences** • REM Mobile Responder (Mobile Squad Leader) – 200 devices (per device), the Licence Period for which is perpetual. **Definition Named User:** Named user is an active entry in the list of users maintained in the REM DMC Client. The fee for the Licensed Software is not impacted by the environment in which it is used. No additional charges shall apply to the Licensed Software when used in the Cloud or Data centre environments. The Customer is granted the right to transfer the Licensed Software to an outsourcer in accordance with clause 2.17 of this Module.

Box 3 Designated Equipment

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.3)	

Specify the hardware platform/operating system combination upon which the Licensed Software is installed. [Note: Specify the type and version number of the operating system and capacity/model of the Hardware, especially if the Class of Licence is based on type or size of capacity of the Hardware.]	Use of the Licensed Software is not limited to any Designated Equipment for purposes of clauses 2 or 3 of Module 3. For purposes of clause 8 of Module 3, the hardware platform/operating system combinations upon which the Licenced Software is installed are as set out in the configuration specification described in: a) For Release 1Non Functional Requirements Specification; b) ROC Release 1 – IMS Architecture Specification for REM Rel 2016.R1; and c) TEMS (as referenced in Schedule 2 of the Customer Contract (Agreement Documents)). For Release 1-T2 a) ROC Release 1-T2 – IMS Architecture Specification for REM Rel 2017.R2 TEMS (as referenced in the PIPP of the Customer Contract (Agreement Documents)).

Box 4 Third Party Components

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Agreed Terms (clause 1.14)	
Third Party Components Specify if the details of any software components, plug-ins and other programs are owned by third parties. This should include name and version number of each Third Party Component. Specify if the Third Party Components are supplied by the Contractor: (a) as part of the Licensed Software; or (b) as a Reseller (in which case Box 11 must be completed) [Note: See clause 2.7 for details.] [Note: Open source software is not included within the definition of Third Party Component.]	No Third Party Components.

Box 5 Extension of Period to Notice to Renew Licence

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Licence Period (clause 2.6(a))	
If the Licence is not perpetual, then specify the number of days written notice prior to the end of each current Licence Period that the Contractor must give of the Price, payment arrangements and/or terms for any extended Licence Period or new Licence Period that is to commence immediately after the end of the current Licence Period. If no period is specified in this Box, the period is 30 days.	Not applicable. The Licence is a perpetual license.

Box 6 Installation

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Installation (clause 3.1)	
Specify if the Contractor is responsible to install the Licensed Software.	a) The Contractor is responsible for the installation of the Licensed Software in the SAT environment. b) The Systems Integrator (as defined in the Additional Conditions) is responsible for the installation of Licensed Software in all other Customer Environments; and c) the Customer is responsible for the installation of the Licensed Software in the Production Environment
If the Contractor is responsible for installation of the Licensed Software: (a) specify the details of the Installation and the date of installation; and	As specified in the PIPP.
(b) specify the Price for the installation, and when the Price is due.	The Price for installation is incorporated in the Contract Price.
Installation (clause 3.3)	
Specify the date by which the access codes must be made available, if	The access codes for the Licensed Software were delivered to the Customer prior to the

applicable. If a date is not specified, the access codes must be provided promptly following the date the Parties enter into the Customer Contract.	Commencement Date. If any further access codes are required by the Customer, these will be provided by the Contractor to the Customer on request.

Box 7 First Release

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
First Release (clause 3.9)	
Specify if the Licensed Software or any New Release will be a First Release. If so, specify the any additional terms and conditions that apply to the First Release. If this Box is not completed, the Licensed Software and each New Release is deemed not to be a First Release.	Not Applicable.

Box 8 Right to Receive Updates and/or New Releases

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Updates and New Release (clause 4.1)	
Specify if the Contractor provides the Customer the rights to receive: (a) Updates; (b) and/or New Releases, as part of the Licence (as opposed to part of a separate Software Support Service under Module 5).	Updates and New Releases will be covered by a separate support contract to be negotiated between the Parties.
Updates and New Release (clause 4.4(c))	
Specify the increased Licence Price when the Customer accepts the Update or New Release. If an increased Price is not specified, the Licence Price must not be increased for any Update or New Release provided during the Licence Period.	Not Applicable. There will not be any increase in the Licence Price for Updates or New Releases of the Licensed Software listed in Box 2 of this Module. If the Customer requires a module that is not included in Box 2, these further modules would be subject to an additional cost subject to further negotiations. However, if the Customer requests new functionality from the Contractor a change in the Licence Price may apply but only to the extent agreed by both Parties in writing and in advance. After the Go-Live date (as specified in the PIPP),

	in order for the Customer to receive New Releases, a Support and Maintenance Contract must be active.

Box 9 Warranties for Open Source Code

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Open Source Software (clause 5.2(b))	
If the software is Open Source Software: (a) specify the Open Source Licence that governs the use of the open source software; (b) specify whether the open source software is provided with the warranties that the Contractor provides in respect of Licensed Software, or whether the Contractor provides the open source software without any warranty (to the extent permitted by law)	Open Source Software will be licensed on the terms (including as to warranties) set out in the Additional Conditions.

Box 10 Ancillary Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Training (clause 6.1)	
Specify if training services are to be provided.	The Contractor must provide system administrator training and application administrator trainings during the Contract Period in order to enable the Customer's Personnel to configure the Licensed Software. Further detail in relation to the training services to be provided by the Contractor is set out in the PIPP.
If so, specify details, dates and the Prices of the training services, and when payment is due.	The training services are described in the PIPP. The Price for the training service is included in the Contract Price.
Other Services (clause 6.2)	
Specify the details, times, Prices for ad hoc issue resolution or support service for	Not Applicable.

the Licensed Software, and when payment is due. [Note: If Software Support Services are being provided for the Licensed Software under Module 5, do not complete this Box.]	

Box 11 Business Models of the Reseller

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Reseller Provision of Licensed Software (clause 7.1)	
Are any of the Deliverables being provided by the Contractor in the capacity as a Reseller? If yes: (a) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller as Facilitator. [Note: Reseller as Facilitator means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(a).] **OR**	Not Applicable.
(b) specify if the Licensed Software is supplied by the Contractor who is acting as Reseller with Pass Through Warranties. [Note: Reseller with Pass Through Warranties means the Contractor is acting in a particular role and has a particular set of responsibilities described in clause 7.1(b).]	

Box 12 Value Add Services

Details to be included from Module 3	Order Details agreed by the Contractor and the Customer
Acquisition through a Reseller (clause	

7.3)	
Specify if the details of any value add services the Contractor is to provide, the Prices and when payment is due.	Not Applicable.

Box 13 Customer Maintains Records

Details to be included from Module 3	**Order Details agreed by the Contractor and the Customer**
Records (clause 10.1(a))	
Specify if and, if so, how the Customer must maintain records as to the locations of all copies of the Licensed Software and the usage of the Licensed Software.	Not Applicable.
Records (clause 10.1(b))	
Specify the frequency that the Customer provides copies of the records under clause 10.1(a). If this Box is not completed the Customer must provide copies of the records ever six months.	Not Applicable.

ANNEXURE A TO THE GENERAL ORDER FORM ADDITIONAL CONDITIONS

PART A: SPECIFIC VARIATIONS TO PROCUREIT

1. Specific Variations to Part 2 of ProcureIT: Customer Contract

1.1 On and from the Commencement Date, Part 2 of ProcureIT Version 3.1 'Customer Contract' is varied as follows:

(a) clause 2.4 is deleted and replaced with the following:

'***2.4*** *The Customer Contract commences on the Commencement Date and will expire at the end of the Contract Period stated in Item 10 of the General Order Form.* '

(b) clause 6.34(d) is deleted and replaced with the following:

'*and if the Contractor has not remedied that Substantial Breach (by completing the LD Obligation) by the end of such period, the Customer may give the Contractor a Termination Notice for the Customer Contract.*'

(c) clause 10.4 is deleted and replaced with the following:

'***10.4*** *To the extent that:*

(a) Acceptance Test Data is required for the Contractor to complete the Acceptance Tests; and

(b) the provision of that Acceptance Test Data is specified as the Customer's responsibility in the Order Documents or the documents setting out the Acceptance Tests,

the Customer must provide that Acceptance Test Data to the Contractor:

(c) at the times specified in the Order Documents or the documents that set out the Acceptance Tests; or

(d) if no times are specified in those documents, at least 14 Business Days prior to the date on which the Acceptance Test Period for the applicable Acceptance Tests commences.';

(d) clause 10.11(b) is deleted and replaced with '*not used.*';

(e) in clause 10.13(a) the following is inserted before ';':

'and does not remedy that failure within 14 days after receiving a notice from the Contractor specifying:

(i) the failure and the Deliverables to which it relates; and

(ii) that the Deliverable will be deemed to be accepted if that failure is not remedied';

(f) clause 10.13(e) is deleted and replaced with '*not used.*';

(g) in clause 13.4 the words 'On the AAD of a' are deleted and replaced with '*For each*';

(h) a new clause 13.5A is inserted as follows:

'***13.5A*** *The Contractor also grants the additional rights for New Material specified in the Additional Conditions.*'

(i) in clause 13.6 the words 'On the AAD of a' are deleted and replaced with '*For each*';

(j) in clause 13.7 the words 'On the AAD of a' are deleted and replaced with '*For each*';

(k) a new clause 13.8A is inserted as follows:

'***13.8A*** *The licences granted under clauses 13.6(c), 13.6(d), 13.7 and 13.8 are perpetual and irrevocable.*'

(l) in clause 13.10 the word 'AAD' is deleted and replaced with 'creation';

(m) clause 13.13 is deleted and replaced with '*Not used*';

(n) in clause 18.4, the words 'Notwithstanding any other clause in the Customer Contract,' are deleted and replaced with '*Subject to the exceptions set out in clause 18.5 and any other exceptions set out in the Additional Conditions,*' and the following words are added to the end of the clause '*For the avoidance of doubt, this clause does not apply in respect of any liquidated damages agreed under clauses 6.28 to 6.34'*;

(o) clause 18.5(e) is moved to a new clause 18.5(f) and the following words are included in clause 18.5(e) '*the Contractor's abandonment of its obligations under this Customer Contract; or*';

(p) clause 19.5(a) is deleted and replaced with '*not used*';

(q) in clause 19.8, the references to clause '18.4,' are deleted;

(r) in clause 25.2 the preamble is deleted and replaced with the following:

'***25.2*** *The Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent it relates to one or more Deliverables if:*';

(s) in clause 25.3 the first sentence is deleted and replaced with the following:

'*The Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent it relates to one or more Deliverables for convenience at any time.*'

(t) the following words are inserted at the beginning of clause 25.4(a), 'if the Order Documents do not state an amount that is payable on termination,';

(u) in clause 25.4(a) the words '; and' are deleted and replaced with '*; or*';

(v) in clause 25.6 the preamble is deleted and replaced with the following:

'**25.6** *The Contractor may give the Customer a Termination Notice for the Customer Contract in its entirety if the Customer:'*;

(w) a new clause 25.6A is inserted under the heading 'Consequences of Termination' as follows:

'***25.6A*** *If a Termination Notice is given for the Customer Contract in its entirety or to the extent that it relates to one or more Deliverables, the termination will be effective on, and the component of the Customer Contract the subject of the Termination Notice will terminate on, the date on which the Transition Out Period ends.*'; and

(x) in clause 26.15 the reference to clause '13.8' is deleted and replaced with '*13.8A*'.

2. Specific Variations to Part 3 of ProcureIT: Dictionary

2.1 On and from the Commencement Date, Part 3 of ProcureIT Version 3.1 'Dictionary' is varied as follows:

(a) a new clause 1.10A is inserted as follows:

'***1.10A*** ***Application*** means each of the following:

(a) DTTS;

(a) IMS; and

(b) CIMS,

as the context requires.';

(b) a new clause 1.18A is inserted as follows:

'***1.18A*** ***CIMS*** *means the customer information management system described in the PIPP;*

(c) a new clause 1.34A is inserted as follows:

'***1.34A*** ***Go Live*** *has the meaning given to that term in the PIPP.*';

(d) a new clause 1.39A is inserted as follows:

'***1.39A*** ***DTTS*** *means the day of operations timetable system as described in the PIPP*';

(e) a new clause 1.57A is inserted as follows:

'***1.57A*** ***IMS*** *means the incident management system described in the PIPP.*'

(f) a new clause 1.57B is inserted as follows:

'***1.57B*** ***Incident*** *has the meaning given to that term in the Service Level Agreement set out in Annexure C to the General Order Form.*';

(g) clause 1.73 is deleted and replaced with the following:

'***1.73*** ***Non-Recurring Services*** *means the Services described in the PIPP.*';

(h) a new clause 1.90A is inserted as follows:

*'**1.90A** **Release 1** has the meaning given to it in the PIPP.'*

(i) a new clause 1.90B is inserted as follows:

*'**1.90B Release 1-T2** has the meaning given to it in the PIPP.'*

(j) a new clause 1.94A is inserted as follows:

'***1.94A*** ***Service Credits*** *has the meaning given to that term in the Service Level Agreement set out in Annexure C to the General Order Form.';*

(k) clause 1.101 is deleted and replaced with the following:

'***1.101*** ***Stage*** *means a stage or phase described in the PIPP.*';

(l) clause 1.104 is deleted and replaced with:

'***1.104*** ***Statutory Requirements*** *means any statute, regulation, by-law, ordinance or subordinate legislation in force from time to time in any relevant jurisdiction and includes industry codes of conduct.*';

(m) a new clause 1.106A is inserted as follows:

'***1.106A*** ***System*** *means the system consisting of DTTS, IMS and CIMS as described in the PIPP and includes all Developed Software and all Updates and New Releases of those items'*;

(n) a new clause 1.110A is inserted as follows:

'***1.110A*** ***Termination Notice*** *means a Notice in Writing given accordance with the Customer Contract or pursuant to a common law right terminating the Customer Contract in its entirety or to the extent it relates to one or more Deliverables.';*

(o) a new clause 1.110D is inserted as follows:

'***1.110D*** ***Transition Out Period*** *has the meaning given to that term in Part B of the Additional Conditions set out in Annexure D to the General Order Form.*';

(p) clause 1.113 is deleted and replaced with the following:

'***1.113*** ***Warranty Period*** *means:*

(a) for Deliverables relating to Release 1, the period commencing on the AAD for that Deliverable and ending on the date which is 12 months after Go Live for Release 1 occurs;

(b) for Deliverables relating to Release 1-T2, the period commencing on the AAD for that Deliverable and ending on the date which is 12 months after Go Live for Release 1-T2 occurs; and

(c) for all other Deliverables, the period commencing on the AAD for that Deliverable and ending on the date which is 12 months after that date.'; and

(q) in clause 1.114 the word '*Defect*' is deleted and replaced with *'Incident'*.

3. Specific Variations to Module 3 – Licensed Software

3.1 On and from the Commencement Date, Module 3 of ProcureIT Version 3.1 'Licensed Software' is varied as follows:

(a) clause 2.1 is deleted and replaced with the following:

'***2.1*** *The Contractor grants to the Customer a non-exclusive License to exercise the rights specified in the Class of License stated in the Module Order Form in relation to the Licensed Software.*';

(b) a new clause 2.1A is inserted as follows:

'***2.1A*** *If the Module Order Form specifies that the Licensed Software may only be used on Designated Equipment, the Customer must only use that Licensed Software on that Designated Equipment.*';

(c) clauses 5.1 and 5.2 are deleted and replaced with the following:

'***5.1*** *Subject to this clause 5:*

(i) nothing in this Customer Contract overrides the terms of any Open Source Licence; and

(ii) any open source code contained in a Deliverable is available only under the terms of the relevant Open Source Licence.

*'**5.2*** *To the extent that any open source code is associated with any Licensed Software, the following overrides the terms of any Open Source Licence:*

(i) the Contractor must ensure that the scope of the licence granted for the open source code under any applicable Open Source Licence is at least as broad as the licences granted for other Licensed Software and Existing Material under this Customer Contract, provided that such open source code is used in accordance with the licence terms contained in this Customer Contract;

(ii) the Contractor must ensure that there are no restrictions, obligations or terms that are more onerous on the Customer than, or inconsistent with, the restrictions, obligations or terms set out in this Customer Contract, including any obligations in the Open Source Licences relating to assignment of intellectual property rights in changes to the open source code or the disclosure of changes to the open source code;

(iii) the Customer provides indemnities and warranties relating to Intellectual Property Rights infringement claims for open source code that are equivalent to the indemnities and warranties in this Customer Contract for other Licensed Software and Existing Material;

(iv) all warranties under the Customer Contract apply to the open source code and the Contractor is obliged to remedy defects in, or replace that open source code if necessary, on the same terms as other Licensed Software and Existing Material; and

(v) the Contractor must not incorporate open source code in the Deliverables unless the Customer provides its written approval.

(d) in clause 8.1 the words 'when operating on the Designated Equipment' are deleted;

(e) in clause 8.2 the words ', *subject to clauses 8.1, 8.3 and 8.4,*' are inserted after the words 'of the subject matter';

(f) clause 8.2(c) and 8.2(e) are deleted and replaced with '*not used*';

(g) in clause 8.2(d) the words 'for the Designated System' are deleted and replaced with '*for the Designated Equipment or as specified in the Contract Specifications*'; and

(h) in clause 9.1(d) is deleted and replaced with the following:

'*(d) any Virus, denial of service attack or other malicious act that adversely affects all or part of the Licensed Software except to the extent that the Virus, denial of service attack or other malicious act:*

(i) was introduced or carried out by the Contractor or any of its Personnel;

(ii) was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or

*(iii) was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;***'**.

4. Specific Variations to Module 5 – Software Support Services

4.1 On and from the Commencement Date, Module 5 of ProcureIT Version 3.1 'Software Support Services' is varied as follows:

(a) a new clause 1.10A is inserted as follows:

'***1.10A*** ***Resolve*** *has the meaning given to that term in the Service Level Agreement in Annexure C to the General Order Form.';*

(b) in clause 1.8, the word 'Defect' is deleted and replaced with the word '*Incident*';

(c) in clause 3.6:

(i) each reference to the word 'Defect' is deleted and replaced with the word '*Incident*'; and

(ii) the word 'remedy' is deleted and replaced with the word 'Resolve';

(d) in clause 3.7:

(i) the word 'remedy' is deleted and replaced with the word 'Resolve'; and

(ii) the word 'Defect' is deleted and replaced with the word 'Incident';

(e) in clause 3.8 each reference to the word 'Defect' is deleted and replaced with the word '*Incident*';

(f) in clause 3.9 the word 'Defects' is deleted and replaced with the word '*Incidents*';

(g) in clause 3.10 the words 'performance rebates stated in the Service Level Agreement' are deleted and replaced with '*Service Credits stated in the Service Level Agreement in Annexure C to the General Order Form.*'

(h) in clause 3.14 the words 'on termination and / or expiry of the Support Services, the Contractor must render any reasonable assistance to the Customer to the extent necessary to effect an orderly assumption by a replacement contractor of the

performance of the Contractor's obligations under the Customer Contract' are deleted and replaced with the following:

'*the Contractor must comply with its transition out obligations set out in the Additional Conditions.*';

(i) in clause 7.1(f) is deleted and replaced with the following:

'*(f) any Virus, denial of service attack or other malicious act that adversely affects all or part of the Supported Software except to the extent that the Virus, denial of service attack or other malicious act:*

(i) was introduced or carried out by the Contractor or any of its Personnel;

(ii) was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or

(iii) was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;'.

5. Specific Variations to Module 7 – Professional Services

5.1 On and from the Commencement Date, Module 7 of ProcureIT Version 3.1 'Professional Services' is varied as follows:

(a) clause 4 is deleted and replaced with '*Not used*':

(b) in clause 6.1(a) the words 'in all material respects during the Warranty Period' are deleted;

(c) in clause 6.1(b) the word 'may' is deleted and replaced with '*must*';

(d) clause 6.2(c), 6.2(e) and 6.2(g) are deleted and replace with '*Not used'* and clauses 6.2(c) to 6.2(g) are renumbered 6.2(a) to 6.2(e) respectively;

(e) in clause 6.2(d) the word '*or*' is inserted at the end of that clause;

(f) in clause 6.4:

(i) the words 'from the Commencement Date until the end of the Warranty Period in relation to the Professional Services that' are deleted; and

(ii) the words 'in all material respects' in the last line are deleted.

(g) in clause 7.1(e) is deleted and replaced with the following:

'*(e) any Virus, denial of service attack or other malicious act that adversely affects all or part of the Deliverables, except to the extent that the Virus, denial of service attack or other malicious act:*

(i) was introduced or carried out by the Contractor or any of its Personnel;

(ii) was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or

(iii) *was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;'.*

6. Specific Variations to Module 8 – Training Services

6.1 On and from the Commencement Date, Module 8 of ProcureIT Version 3.1 'Training Services' is varied as follows:

(a) clause 4 is deleted and replaced with '*Not used*':

(b) in clause 6.1(a) the words '*in all material respects during the Warranty Period'* are deleted;

(c) clauses 6.2(a) and 6.2(b) are deleted and replaced with '*not used'*;

(d) in clause 6.4 the words *'from the Commencement Date until the end of the Warranty Period in relation to the Training Services that'* are deleted; and

(e) clauses 7.1(a), 7.1(c), 7.1(d), 7.1(e) and 7.1(f) are deleted and replaced with '*not used*'.

7. Specific Variations to Module 9 – Data Migration

7.1 On and from the Commencement Date, Module 9 of ProcureIT Version 3.1 'Data Migration' is varied as follows:

(a) in clause 7.1(a) the words *'in all material respects during any applicable Warranty Period'* are deleted; and

(b) in clause 8.1(d) the words *'(except to the extent that the attack or malicious act is an attack or malicious act of the Contractor)*' are deleted and replaced with the following:

'*, except to the extent that the Virus, denial of service attack or other malicious act:*

(i) *was introduced or carried out by the Contractor or any of its Personnel;*

(ii) *was introduced or occurred as a result of the Contractor's or any of its Personnel's negligence; or*

(iii) *was introduced or occurred as a result of the Contractor breaching any of its obligations under the Customer Contract;'.*

PART B: OTHER ADDITIONAL CONDITIONS

8. Definitions

8.1 In the Additional Conditions in this Part B:

Business Change means:

(a) any Divestiture; or

(b) any restructure, dissolution, merger, transfer of any or all of its assets, staff, and liabilities in respect of all or any part of the Customer's business or operations, or any

consolidation (including the performance of common functions) of the Customer or any part of the Customer, with any other entity.

Customer Data means:

(a) data, information and other materials provided to, or generated by, the Contractor relating to the Customer or any other Agency or any of their operations, facilities, customers, Personnel, assets and programs (**Raw Data**); and

(b) data, information and other materials in any format whatever generated, stored, processed, retrieved, printed or produced by or on behalf of the Contractor utilising the Raw Data.

Customer Environment means the combination of hardware, software, systems and network infrastructure and services used by the Customer from time to time.

Divestiture means any sale or divestiture of all or part of the Customer, its business or other assets, in whatever form (including by way of an initial public offering of shares).

Interfacing Contractor means a person who supplies goods, services or other inputs with whom the Contractor must interface or interact to supply the Deliverables or otherwise as part of completing the project described in the PIPP, and includes the Key Contractors.

Key Contractor means each of the following:

(a) Ajilon Australasia Pty Ltd;

(b) Thales Australia Limited;

(c) Quintiq Pty Ltd; and

(b) any other person specified as a 'key contractor' by the Customer from time to time.

Relevant Entity means any entity or organisation to which all or part of the Customer that is sold or divested, or with which the Customer is merged or consolidated as a result of a Divestiture.

RFP means the request for proposals titled 'No WS178494 Rail Operations Centre (ROC) Technology Solution' dated 7 July 2014.

ROC Technology Solution has the meaning given to it in the PIPP.

Transition Out means the transfer of responsibility for the supply of the Deliverables to the Customer or a third party designated by the Customer.

Transition Out Period has the meaning given to that term in clause 40.1 of these Additional Conditions.

Transition Services means any transition services that the Customer is required to supply relating to a Business Change.

8.2 All other capitalised terms in this Part B of these Additional Conditions have the meaning given to them in Part 3 of the Customer Contract.

9. Benefit of knowledge assets

9.1 The Contractor must do all things necessary to ensure that the Customer benefits from access to the Contractor's knowledge assets developed and captured through the Contractor's work globally, including by giving the Customer:

(a) the opportunity to attend and participate at all of the Contractor's strategic information technology and customer forums, including the Customers:

(i) customer advisory councils; and

(ii) research and development and other technical forums; and

(b) access to, and an ability to comment on, the Contractor's internal technology roadmaps showing new technologies that it or its Subcontractors are developing, emerging trends in the industry and its development concepts which have not yet been formalised as Future Commitments.

10. Compatibility and interoperability

10.1 The Contractor must ensure that:

(a) the Application that it supplies meets the requirements relating to compatibility and interoperability specified for that Application in the Contract Specifications;

(b) the Application that it supplies is compatible with, and is capable of being integrated and interoperating with, each other Application through either:

(i) standard interfaces; or

(ii) interfaces developed in accordance with standard industry practices and methodologies,

so that the System meets the requirements for the System set out in the Contract Specifications; and

(c) the Application that it supplies is compatible with, and is capable of being integrated and interoperating with, the Customer Environment:

(i) through either standard interfaces or interfaces developed in accordance with standard industry practices and methodologies; and

(ii) without causing any outage, interruption or degradation of any component of the Customer Environment.

11. Interfaces, methodologies and tools

INTERFACES

11.1 To the extent that the Contractor is required to design, develop and supply any interfaces between:

(a) IMS and the other Applications; or

(b) IMS and the Customer Environment,

the Contractor must design, develop and supply each interface:

(c) in a way that will enable the interface to accommodate subsequent Updates and New Releases of the software to which the interface relates (including Updates and New Releases for IMS); and

(d) so that those interfaces are capable of being used as the basis for interfaces between IMS and other software.

METHODOLGIES

11.2 The Contractor must supply the Deliverables in accordance with the methodologies specified in the PIPP.

TOOLS

11.3 The Contractor must:

(a) advise the Customer in writing of all software tools used in the performance of the Services where such tools are necessary for ongoing enhancement or maintenance of the Deliverables; and

(b) if requested to do so by the Customer, licence those software tools to the Customer on terms equivalent to the terms of the Customer Contract, or procure a licence for the Customer for those software tools.

12. Requirements

12.1 The Contractor must:

(a) ensure the Deliverables that it supplies under the Customer Contract are consistent with, and are based on the PIPP, and meet the Contract Specifications; and

(b) supply Deliverables for IMS which ensure that:

(i) IMS meets all of the requirements specified for that Application in the PIPP and the Contract Specifications;

(ii) IMS integrates and interoperates with each other Application so that the System meets the requirements for the System specified in the PIPP and the Contract Specifications; and

(iii) IMS integrates and interoperates with, the Customer Environment:

(A) as described in the PIPP and the Contract Specifications; and

(B) without causing any outage, interruption or degradation of any component of the Customer Environment; and

(c) design IMS in a manner that minimises the effort required to have the IMS modified or integrated with other software at a later date.

13. Approval of Documents

APPLICATION

13.1 The process in this clause 13 applies to all Deliverables that are Documents.

SUBMISSION

13.2 The Contractor must submit all Deliverables which are Documents for approval in accordance with this clause 13 by the applicable date for that Deliverable specified in the PIPP.

13.3 AAD for a Document will occur on the date on which that Document is approved in accordance with this clause 13.

APRROVAL

13.4 The Customer must, within 15 Business Days after a Document is submitted to the Customer (or any alternative timeframe agreed between the Parties in writing), review that Document and give the Contractor a Notice in Writing specifying that:

(a) the Document meets the Contract Specifications and the Customer approves the Deliverable; or

(b) the Document does not meet the Contract Specifications and the Customer requires amendments to the Document, in which case the Customer must specify those amendments in the Notice in Writing.

13.5 If the Customer gives the Contractor a Notice in Writing requiring amendments to a Document under clause 13.4(b) of these Additional Conditions, the Contractor must, within 5 Business Days (or any alternative timeframe agreed between the Parties in writing), prepare a revised version of the Document which addresses all of the amendments required by the Customer.

13.6 The Parties must repeat the process in this clause 13 until the Customer approves each Document in accordance with clause 13.4(a) of these Additional Conditions or the Customer gives the Contractor a Notice in Writing in accordance with clause 13.7 of these Additional Conditions.

TERMINATION

13.7 If the Customer gives a Notice in Writing under clause 13.4(b) of these Additional Conditions 3 or more times for a Document, the Customer may terminate the Customer Contract to the extent it relates to that Deliverable and any related or dependent Deliverables supplied or to be supplied under the Customer Contract, with immediate or later effect, by giving the Contractor a Notice in Writing.

REFUND

13.8 If the Customer exercises its right under clause 13.7 of these Additional Conditions, the Contractor must, within 10 Business Days after receiving the Notice in Writing, refund to the Customer all amounts paid by the Customer in connection with the component of the Customer Contract that has been terminated.

14. Background checks

CONTRACTOR CHECKS

14.1 If requested by the Customer, or otherwise required by a Customer policy specified in the Order Documents, the Contractor must:

(a) conduct background checks on the Contractor's Personnel in the performance of the Customer Contract as and when required by the Customer or as specified in the applicable Customer policy; and

(b) not use any Personnel in the performance of the Customer Contract who do not meet the requirements specified by the Customer (acting reasonably) from time to time, including in an applicable Customer policy, (**Customer Personnel Requirements**) unless otherwise directed by the Customer.

14.2 The Contractor must give the Customer the results of any background checks it conducts under clause 14.1 of these Additional Conditions within 2 Business Days of receipt.

CUSTOMER CHECKS

14.3 The Customer may at any time:

(a) carry out the background checks referred to in clause 14.1 of these Additional Conditions itself; and

(b) conduct such other investigations and background checks as the Customer considers appropriate,

(**Customer Checks**).

14.4 From time to time, the Customer may (acting reasonably) request assistance relating to the Customer Checks. The Contractor must provide all assistance relating to the Customer Checks requested by the Customer promptly after the Contractor receives that request.

14.5 If a Customer Check shows that a member of the Contractor Personnel does not meet the Customer Personnel Requirements, the Customer must advise the Contractor as soon as possible.

CONSENT

14.6 The Contractor must obtain all necessary consents from Contractor Personnel to enable:

(a) the Contractor and the Customer to conduct the checks or investigations under clauses 14.1 and 14.2 of these Additional Conditions; and

(b) the Contractor to provide the results of its checks or investigations to the Customer.

14.7 If the Contractor is unable to obtain a consent required under clause 14.6 of these Additional Conditions from a person, then, unless the Customer otherwise agrees in writing, the Contractor must:

(a) not engage that person to perform, or remove that person from performing, the Contractor's obligations under the Customer Contract; and

(b) provide a replacement for that person who is acceptable to the Customer within 2 Business Days after the date on which it became aware of that issue.

REMOVAL AND REPLACEMENT

14.8 If:

(a) a check performed by the Contractor or a Customer Check performed by the Customer shows that a member of the Contractor Personnel does not meet the Customer Personnel Requirements; and

(b) that person is engaging in the supply of the Deliverables or the performance of the Contractor's obligations under this Customer Contract,

(**Relevant Person**) the Contractor must immediately:

(a) remove that Relevant Person from the supply of the Deliverables or the performance of the Contractor's obligations under this Customer Contract; and

(b) withdraw and remove all access that the Relevant Person has to the Customer Data, Customer Supplied Items, Customer software or systems or the Sites.

14.9 If the Contractor is required to remove a Relevant Person in accordance with clause 14.8 of these Additional Conditions, the Contractor must replace that Relevant Person:

(a) with a member of the Contractor Personnel who meets the requirements for the Contractor's Personnel specified in the Customer Contract; and

(b) if the Relevant Person is one of the Specified Personnel, with a member of the Contractor Personnel who is approved by the Customer in accordance with clause 8.9 of Part 2 of the Customer Contract.

TERMINATION NOTICE

14.10 If the Contractor breaches this clause 14, the Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent it relates to one or more Deliverables with immediate or later effect.

15. Personnel

SKILLS, EXPERIENCE

15.1 The Contractor must:

(a) only use Personnel who:

(i) are suitably qualified, skilled and experienced to supply the Deliverables; and

(ii) have received training on the applicable requirements for supplying the Deliverables, including compliance with all applicable Customer policies; and

(b) ensure that all Contractor Personnel involved in the supply of the Deliverables are fluent in, and communicate with the Customer in, English.

REPLACEMENT PERSONNEL

15.2 The Customer (acting reasonably) may at any time request the Contractor to replace any member of the Contractor Personnel stating the reasons for the requirement.

15.3 If the Customer makes a request under clause 15.2 of these Additional Conditions, the following procedure will apply:

(a) if the reason for the request is due to:

(i) a contravention of a Statutory Requirement, another law or a Customer policy by that member of the Contractor Personnel;

(ii) a breach of the work health and safety obligations or other act or omission by that member of the Contractor Personnel that endangered the health or safety of any person on a premises, Site, facility or other location owned, leased or operated by the Customer; or

(iii) serious misconduct by that member of the Contractor Personnel,

the Contractor must immediately remove that member of the Contractor Personnel from the supply of the Deliverables or the performance of the Contractor's obligations under this Customer Contract;

(b) for any other reason, the Contractor must:

(i) promptly meet with the Customer and discuss its concerns; and

(ii) if, after those discussions, the Contractor cannot demonstrate to the Customer's satisfaction (acting reasonably) that it is able to address the Customer's concerns in a reasonable timeframe, replace that member of the Contractor Personnel; and

(c) if the Contractor is required to replace a member of the Contractor Personnel in accordance with this clause 15.3 it must ensure that:

(i) where that replacement relates to Specified Personnel, the person is approved by the Customer in accordance with clause 8.9 of Part 2 of the Customer Contract;

(ii) to the extent possible, there is a sufficient handover between the original member of the Contractor Personnel and the replacement so that the replacement is fully aware of the Deliverables and the Customer's requirements in connection with the Customer Contract (at no cost to the Customer); and

(iii) it withdraws and removes all access that the member of the Contractor Personnel being replaced has to the Customer Data, CSI, Customer software or systems or the Sites on the date on which that member of the Contractor Personnel was removed.

15.4 If the Contractor:

(a) breaches clause 15.3(a) of these Additional Conditions, the Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Termination Notice;

(b) breaches clause 15.3(b) or 15.3(c) of these Additional Conditions and has not remedied the breach within 10 Business Days of receipt of a notice from the Customer specifying the breach and requiring the breach to be remedied, the Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Termination Notice.

16. Sites

16.1 The Contractor must supply the Deliverables to or at the sites specified in the PIPP. Each of these sites will be a 'Site' for the purposes of the Customer Contract.

17. Restrictions relating to locations of performance

17.1 The Contractor must not:

(a) supply any of the Deliverables from or at; or

(b) store, access, send, transfer or make accessible, any of the Customer Data at, to or from,

a location outside of New South Wales unless:

(a) that location is specified in the PIPP; or

(b) the Contractor has the prior written consent of the Customer (such consent not to be unreasonably withheld).

17.2 If the Customer provides the Contractor with consent under clause 17.1 of these Additional Conditions, the Contractor must comply with any conditions imposed by the Customer.

18. Service warranties

18.1 In addition to any other obligations of the Contractor under the Customer Contract, the Contractor warrants and represents that:

(a) all Deliverables which are Services will be supplied in a safe and efficient manner and to the best of the Contractor's skill and knowledge; and

(b) it has the necessary knowledge and resources to supply the Deliverables.

19. Fitness for purpose

19.1 In addition to any other Contract Specifications set out in the Customer Contract, the Contractor must ensure that each Deliverable is fit for the purposes for which it was supplied, including any purposes specified in the PIPP.

20. Governance

20.1 Each Party must comply with the governance procedures specified in the PIPP, for the Deliverables described in the PIPP.

21. Multi-sourcing and co-operation

21.1 The Contractor, must establish relationships and arrangements with all other Interfacing Contractors through which they:

(a) work together;

(b) co-ordinate their activities;

(c) co-operate fully and comprehensively with each other;

(d) interface their operations in a manner which is seamless;

(e) integrate the services they each supply;

(f) establish integrated processes which preserve their responsibility for the services they supply and ensure delivery of service level requirements; and

(g) agree the scope of obligations and interactions needed to minimise the need for the Authority to be involved in resolving service problems or managing their relationship,

(**Integration Outcomes**).

21.2 The Customer will appoint:

(a) a system integrator who is primarily responsible for integrating the Applications and the System and the Deliverables supplied by the Contractor and other Interfacing Contractors (**System Integrator**); and

(b) the System Integrator as its agent to manage the Customer Contract and the Contractor's performance.

21.3 The Customer may change the System Integrator from time to time by giving the Contractor a Notice in Writing. If the Customer does so:

(a) the old System Integrator will cease to become the System Integrator for the purposes of the Customer Contract; and

(b) the person specified as the 'system integrator' in the notice will become the System Integrator for the purposes of the Customer Contract,

on and from the date of the Notice in Writing.

21.4 The Contractor must:

(a) interact with the System Integrator; and

(b) treat and comply with, any request, notice, direction or instruction given by the System Integrator relating to the Customer Contract which is in the scope of the appointment,

as if it were the Customer.

21.5 The Contractor must:

(a) provide the Customer and each Interfacing Contractor (as applicable) all co-operation and assistance requested by the Customer or an Interfacing Contractor (as applicable), including by:

(i) working with the Customer and Interfacing Contractors to facilitate the discharge of end-to-end service obligations and the meeting or exceeding of end-to-end service levels; and

(ii) providing the Customer and each Interfacing Contractor with access to materials and other resources; and

(b) do all other things necessary,

to achieve the Integration Outcomes and to ensure that all services and deliverables (including the Deliverables) supplied to the Customer by the Contractor and each Interfacing Contractor, are supplied in a coordinated, effective and timely manner.

21.6 The Contractor must supply the Deliverables in a manner which allows the System Integrator to discharge its role under its contract with the Customer.

21.7 If directed by the Customer, the Contractor must supply the Deliverables to the System Integrator.

21.8 The Contractor:

(a) acknowledges and agrees that any disputes between the Contractor and an Interfacing Contractor (**IC Disputes**) are to be resolved as far as possible without the need for the Customer's intervention; and

(b) an IC Dispute must be reported to, and escalated to, the Customer in accordance with the process set out in the PIPP if it continues for more than 5 Business Days.

21.9 During the course of any IC Dispute, the Contractor must continue working with the Interfacing Contractors to maintain continuity of the Deliverables and the services and deliverables supplied by the Interfacing Contractor, regardless of responsibility.

22. Customer Supplied Items

22.1 The Contractor must:

(a) comply with the terms of all contracts with a third party relating to Customer Supplied Items (each a **CSI Contract**) that have been notified to the Contractor by the Customer in writing;

(b) not do, or fail to do, anything that would cause the Customer (or any other Agency) to breach the terms of a CSI Contract, or otherwise incur any liability under, a CSI Contract that has been notified to the Contractor pursuant to clause 22.1(a); and

(c) comply with all of the Customer's policies and procedures that apply to the Customer Supplied Items, as updated by the Customer from time to time.

23. Business Change

RIGHTS

23.1 The Contractor acknowledges and agrees that the Customer may by giving notice to the Contractor:

(a) use the Deliverables (including for the benefit of a Relevant Entity);

(b) sublicense or permit one or more persons to use any of the Deliverables;

(c) assign some or all of its rights under the Customer Contract to one or more persons;

(d) novate all or part of the Customer Contract to one or more persons; or

(e) require the Customer to supply one or more of the Deliverables directly to any other Relevant Entity,

for the purposes of facilitating or implementing a Business Change.

23.2 The Contractor consents to any novation or assignment notified to the Contractor in accordance with clause 23.1 of these Additional Conditions

CONTRACTOR FACILITATION

23.3 The Contractor must, on request by the Customer, do all things reasonably necessary:

(a) to facilitate a Business Change; and

(b) to give effect to or implement any of the arrangements contemplated in clause 23.2 (including promptly executing all necessary documents and granting all necessary rights).

23.4 Any assistance required by the Customer from the Contractor in connection with a Business Change in addition to the Contractor's obligations in clause 23.3 will be subject to the Parties agreeing a Change Request.

DISCLOSURE

23.5 In addition to any other rights that the Customer has under the Customer Contract, the Customer may disclose the terms of the Customer Contract and any Confidential Information of the Contractor:

(a) to any department or office of the State of New South Wales or other Agency;

(b) to any Relevant Entity or proposed Relevant Entity; or

(c) to any adviser or personnel of any such person specified in clauses 23.5(a) or 23.5(b) of these Additional Conditions.

24. Audit

APPLICATION AND INTERPRETATION

24.1 The right to conduct an audit under this clause 24 of these Additional Conditions is in addition to, and does not derogate from any other audit or inspection rights that the Customer may have under the Customer Contract.

RECORD KEEPING

24.2 The Contractor must maintain the records referred to in clause 23.4 of Part 2 of the Customer Contract until the date which is seven years after the Customer Contract expires or is terminated.

RIGHT TO AUDIT

24.3 The Customer may, at any time during the Contract Period or the period which is seven years after the Customer Contract expires or is terminated, conduct an audit for one or more of the following purposes:

(a) to assess the Contractor's performance and compliance with the Customer Contract;

(b) to assess the accuracy of the invoices given by the Contractor under the Customer Contract;

(c) to assess the Contractor's quality management system;

(d) to assess the Contractor's work health and safety system;

(e) to assess competencies of the Contractor's Personnel, applicable licences and certifications and other relevant factors; or

(f) to otherwise meet any applicable contractual, regulatory, governmental or management requirements,

by giving a Notice in Writing (**Audit Notice**) to the Contractor a reasonable time prior to the date on which the audit will commence.

24.4 If the Customer gives the Contractor an Audit Notice, the Contractor must give the Customer and its Personnel (including external auditors):

(a) full access:

(i) to all sites, facilities and other resources (including Personnel) used by the Contractor or its Personnel to perform its obligations under the Customer Contract; and

(ii) to all of the records maintained under clause 23.4 of Part 2 of the Customer Contract and other information relating to the Customer Contract (whether located in Australia or elsewhere); and

(b) all assistance reasonably required by the Customer and its Personnel to conduct the audit.

COPIES OF RECORDS AND INFORMATION

24.5 The Customer may take copies of any records or other information it reviews as part of an audit.

COSTS

24.6 Each Party will be responsible for its own costs of exercising its right under, or complying with, this clause 24 of these Additional Conditions.

SURVIVAL

24.7 This clause 24 of these Additional Conditions survives termination or expiry of the Customer Contract.

25. Inspections

APPLICATION AND INTERPRETATION

25.1 The right to conduct an inspection under this clause 25 of these Additional Conditions is in addition to, and does not derogate from any other audit or inspection rights that the Customer may have under the Customer Contract.

INSPECTIONS

25.2 The Customer may, at any time during the Contract Period:

(a) inspect the sites, facilities or other resources used by the Contractor or its Personnel to supply the Deliverables; or

(b) attend the Contractor's or any of its Personnel's sites or facilities used to supply the Deliverables and observe the supply of the Deliverables,

by giving the Contractor a Notice in Writing (**Inspection Notice**) to the Contractor a reasonable time prior to the date on which the inspection will commence.

25.3 If the Customer gives the Contractor an Inspection Notice, the Contractor must give the Customer and its Personnel:

(a) access to its, or its Personnel's, sites, facilities and other resources specified in the Inspection Notice; and

(b) all assistance reasonably required by the Customer and its Personnel to conduct the inspection.

COSTS

25.4 Each Party will be responsible for its own costs of exercising its right under, or complying with, this clause 25 of these Additional Conditions.

26. Engagement and RFP

THE RFP

26.1 The Contractor acknowledges and agrees that:

(a) the RFP was for the design, implementation and support of the System;

(b) the Contractor submitted a response to the RFP relating to IMS;

(c) despite the Parties entering into this Customer Contract for the Deliverables described in the PIPP, the Customer has not yet completed or awarded other components of the RFP (**Other RFP Components**); and

(d) nothing in the Customer Contract affects, or makes any representation relating to, the Other RFP Components and the Customer may award part or all of the Other RFP Components to the Contractor, any other person or any combination of them.

26.2 The Customer excludes any and all liability to the Contractor relating to the outcome of the RFP (including if the RFP is awarded to another person).

26.3 The Contractor releases the Customer from any and all claims that the Contractor may have against the Customer relating to the RFP. The Customer may plead this clause 26.3 in bar to any proceedings commenced by the Contractor relating to the RFP.

SUPPORT

26.4 If the Contractor is selected as a preferred supplier to support any component of the System, the Contractor must negotiate in good faith the terms of the contract under which the Contractor will supply the applicable services and other deliverables (**Support Contract**) based on:

(a) ProcureIT v 3.1;

(b) the ProcureIT v 3.1 template Order Forms for Module 5;

(c) the Baseline Support Terms included in Appendix L of the PIPP;

(d) Support_Plan_2014_00754_R20_V10 provided by the Contractor in their RFQ Response; and

(e) the draft Service Level Agreement (provided by the Customer to the Contractor on or around 22 October 2014).

27. Exchange of information between Agencies

27.1 The Customer may disclose, communicate or make available, any information concerning the Contractor or relating to the Customer Contract (including any Confidential Information of the Contractor) to one or more Agencies.

27.2 The Contractor acknowledges and agrees that:

(a) information about the Contractor from any source, including reports of performance, may be taken into account by Agencies (including the Customer) considering whether to offer the Contractor future opportunities for other work; and

(b) the communication of such information to any NSW government agency is a communication falling within section 30 of the *Defamation Act 2005* (NSW).

27.3 The Contractor releases the Customer, all other Agencies and the State of New South Wales from and against any claim or cause of action it has or may have arising out of, or in relation to, any disclosure or any communications contemplated in this clause 27 (**Released Matters**). The Customer may plead this clause 27.3 in bar to any proceedings commenced by the Contractor relating to the Released Matters.

27.4 The Contractor indemnifies the Customer against any losses, liabilities, damages, costs and expenses that the Customer or any other Agencies or the State of New South Wales suffers or incurs relating to:

(a) any of the Released Matters; or

(b) any claim by any persons arising out of or relating to the Customer disclosing, or an Agency using, any information provided by the Contractor in accordance with clause 27 of these Additional Conditions.

28. GIPAA

28.1 The Contractor acknowledges that the Customer may be required to publish certain information concerning this Customer Contract in accordance with sections 27 to 35 of the *Government Information (Public Access) Act 2009* (NSW).

28.2 If the Contractor reasonably believes that any part of the Customer Contract contains information which is commercial-in-confidence or could reasonably be expected to affect public safety or security, then the Contractor must immediately advise the Customer in writing, identifying the provisions and providing reasons so that the Customer may consider seeking to exempt those provisions from publication.

28.3 Within three days of receiving a written request from the Customer, the Contractor must (at no cost to the Customer) provide the Customer with immediate access to information referred to in section 121(1) of the *Government Information (Public Access) Act 2009* (NSW) (but excluding information referred to in section 121(2) of the *Government Information (Public Access) Act 2009*) contained in records held by the Contractor, in the format and using the medium, reasonably required by the Customer. This is a fundamental term of this Customer Contract.

29. Licence rights and open source software

29.1 If the Contractor supplies any software as part of, or as an output of, any Services, the Intellectual Property Rights of which are not assigned under clause 13.10 of Part 2 of the Customer Contract or licensed under the terms of Module 3, the Contractor grants to the Customer a non-exclusive, royalty free, perpetual, irrevocable licence to:

(a) install, run and use the that software for its business purposes;

(b) reproduce and copy that software as required to install, run and use the software or for any backup, archive or security purposes; and

(c) sublicense to any person to exercise any of the rights specified in clauses 29.1(a) or 29.1(b) of these Additional Conditions for the Customer's business purposes or to otherwise supply services to the Customer.

29.2 The Deliverables must not incorporate open source software in any software that is a Deliverable, unless otherwise approved by the Customer in writing.

29.3 If the Customer approves the incorporation of open source software in a Deliverable

(a) the Parties agree that the open source software will be licensed as 'Licensed Software' under the terms set out in clause 3; and

(b) the Contractor must ensure that the use or modification of that open source software will not result in an obligation to, disclose, licence or otherwise make available any part of the System, Customer Supplied Items or the Customer Environment or any other part of the Customer's Confidential Information to any third party.

30. Additional licence rights

30.1 In addition to any other rights granted under the Customer Contract, if the Deliverables are, or incorporate, any of the Contractor's Existing Material, then, on and from the date on which they are supplied, the Contractor grants the Customer a non-exclusive, irrevocable, royalty-free licence:

(a) to use, reproduce, modify and adapt the Contractor's Existing Material for its internal business purposes; and

(b) to sub-license to any other person to use, reproduce, adapt and modify the Contractor's Existing Material for the Customers internal business purposes, including to supply services and deliverables to the Customer.

30.2 The Contractor warrants that no third party Existing Material (not including Existing Material from the Contractor or a Related Entity) is included in any Deliverables. This section 30.2 does not deal with Open Source Software which is covered in section 29.

30.3 The Contractor warrants that it has all rights, licences, consents and other approvals necessary to grant the licenses in clauses 30.1 and 30.2 of these Additional Conditions.

30.4 For the avoidance of doubt, clause 30.1 and 30.2 does not give the Customer access to Source Code material unless otherwise provided for in the contract.

31. Liability to Agencies and the State of New South Wales

The Contractor acknowledges and agrees that the Customer holds the benefit of the Contractor's obligations, the Customer's rights and any release or indemnity under the Customer Contract as principal and on trust for each of RailCorp, Transport for NSW and NSW Trains (as if the obligation, right, release or indemnity had been expressed to be for the benefit of RailCorp, Transport for NSW and NSW Trains).

31.1 If any of RailCorp, Transport for NSW or NSW Trains suffers losses as a result of one or more acts or omissions of the Contractor or any of its Personnel relating to the performance, non-performance or termination of the Customer Contract, the Customer will be able to recover those losses from the Contractor:

(a) as if the losses were suffered or incurred by the Customer itself;

(b) to the extent that losses would have been capable of being recovered by the Customer had the Customer suffered those losses; and

(c) subject to the limitations and exclusions of liability set out in clause 18 of the Customer Contract.

32. Destruction of information

32.1 Subject to the Contractor's obligation under clause 24.2 of these Additional Conditions, the Contractor must, and must ensure that all of its Personnel, destroy or return:

(a) all Confidential Information of the Customer; and

(b) all other Customer Data (including any Personal Information),

that is in its, or any of its Personnel's possession or control:

(a) within 5 Business Days of a request from the Customer to do so; or

(b) on termination or expiry of the Customer Contract,

unless Contractor is required by law to keep any of this information. Any information kept by the Contractor in order to comply with any law must be kept subject to the obligations of confidentiality set out in this Customer Contract .

32.2 This clause 32 survives termination or expiry of the Customer Contract.

33. Defect rectification

APPLICATION AND INTERACTION WITH OTHER PARTS OF THE CUSTOMER CONTRACT

33.1 This clause 33 of these Additional Conditions sets out the general warranty and Defect rectification process for the Deliverables.

BREACH OF SERVICE WARRANTY

33.2 If the Contractor breaches any warranty in relation to any of the Services, the Customer may (in addition to any other remedies it may have at law or under the Customer Contract) require the Contractor to supply the Services again at the Contractor's cost.

DEFECTS

33.3 Subject to clause 33.4 of these Additional Conditions, without limiting any of the Customer's rights under law or the Customer Contract, if at any time during the Warranty Period for a Deliverable (that is not a Service), the Contractor becomes aware, or the Customer advises the Contractor of a Defect in that Deliverable, the Contractor:

(a) must do all things necessary to correct the Defect:

(i) in accordance with the timeframes specified in the Customer Contract; or

(ii) if no timeframe is specified in the Customer Contract, within 5 Business Days after the date on which the Defect was identified (or any alternative timeframe agreed between the Parties in writing); and

(b) warrants that the replacement or repaired Deliverable will comply with the applicable warranties in the Customer Contract.

33.4 Clause 33.3 of these Additional Conditions, does not apply to a Defect for a Deliverable to the extent that any of the exceptions to the warranties set out in the relevant Module under which that Deliverable was supplied applies.

REMEDIES FOR SUPPLIER FAILURE TO CORRECT DEFECTS

33.5 Without limiting any of the Customer's rights under law or the Customer Contract, if the Contractor does not correct a Defect in accordance with clause 33.3, the Customer may do any one or more of the following:

(a) require the Contractor to negotiate in good faith to agree a Change Request to the Customer Contract to provide a reduction in the Contract Price to reflect a diminution in value of the applicable Deliverable;

(b) either correct the Defect itself or by using another supplier, in which case the Contractor must pay the costs and expenses suffered or incurred by the Customer in doing so within 30 days of a demand by the Customer to do so; or

(c) pursue any other remedy it may have at law or under the Customer Contract.

34. Viruses

PROTECTION AND SCANNING

34.1 The Contractor must, and must ensure that its Personnel:

(a) use appropriate processes and up-to-date industry standard detection software (**Virus Software**) designed:

(i) to prevent the introduction of Viruses into, and to detect and eliminate, Viruses from the Deliverables; and

(ii) to prevent the introduction of Viruses into:

(A) the software or systems used by the Contractor or any of their Personnel in the course of supplying the Deliverables; or

(B) the Customer Environment or any Customer Supplied Items by the Contractor or a member of its Personnel; and

(b) prior to supplying a Deliverable that is susceptible to Viruses, scan the Deliverable using the Virus Software; and

(c) prior to connecting any devices (including laptops, flash drives, memory or other devices) to any software or systems used by the Customer, scan the device using the Virus Software.

GENERAL OBLIGATIONS

34.2 The Contractor must not, and must ensure that its Personnel do not:

(a) supply a Deliverable if a Virus has been detected in that Deliverable, until the Contractor (or member of its Personnel) is certain that the Virus has been eliminated;

(b) connect any device on which a Virus has been detected to any software or system used by the Customer, until the Contractor (or member of its Personnel) is certain that the Virus has been eliminated; or

(c) introduce a Virus into a Deliverable or any software or system used by the Customer in the course of performing any of its obligations under the Customer Contract.

REMEDY

34.3 In addition to any other rights the Customer may have under the Customer Contract, if a Virus is introduced into a Deliverable or any of the Customer's software or systems:

(a) by the Contractor or any of its Personnel;

(b) as a result of the Contractor's or any of its Personnel's negligence; or

(c) as a result of the Contractor breaching any of its obligations under clause 34.1 or 34.2 of these Additional Conditions or any other term of the Customer Contract,

the Contractor must pay the costs and expenses incurred by the Customer relating to:

(a) identifying and removing the Virus; and

(b) restoring any data lost, damaged or corrupted as a result of the Virus to the last backed-up version of that data and otherwise remedying the impact of the Virus.

35. Civil Liability Act and Liability

35.1 The Parties exclude the operation of Part 4 of the *Civil Liability Act 2002* (NSW).

35.2 The limitations of liability and exclusions set out in clause 18 of Part 2 of the Customer Contract do not apply to the Contractor's liability for a breach of, or under, any of clauses 2222,27.427.4 and 30.330.3 of these Additional Conditions.

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36. Cross Termination

36.1 The Customer may terminate the Customer Contract in its entirety or to the extent it relates to one or more Deliverables, with immediate or later effect, by giving the Contractor a Termination Notice if the Customer gives a termination notice for another Customer Contract with an Interfacing Contractor other than for convenience. Termination under this clause 36 will be treated in the same way as a termination for convenience under clause 25.3 of Part 2 of the Customer Contract and clause 39 of these Additional Conditions. For the avoidance of doubt, the Contractor will be entitled to recover liabilities, costs or expenses in the manner set out in clause 39 of these Additional Conditions.

37. Termination at the end of a Stage

37.1 The Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety at the end of a Stage in its sole and absolute discretion.

37.2 The Customer will not be liable for any amounts as a result of a termination under clause 37.1 of these Additional Conditions.

38. Termination for failing to pass the Acceptance Tests

38.1 If the Customer rejects a Deliverable under clause 10.12(e) of Part 2 of the Customer Contract, the Customer may give the Contractor a Termination Notice for the Customer Contract in its entirety or to the extent that it relates to one or more Deliverables.

38.2 If the Customer gives the Contractor a Termination Notice under clause 38.1 the Contractor must refund all amounts paid for the Deliverables the subject of the Termination Notice within 10 Business Days after the date on which the Termination Notice is given.

39. Costs relating to a termination for convenience

39.1 If the Customer gives a Termination Notice under clause 25.3 of Part 2 of the Customer Contract, and the Contractor is entitled to recover liabilities, costs or expenses under clause 25.4 of Part 2 of the Customer Contract (**Termination Costs**), the Contractor may only do so to the extent that:

(a) those Termination Costs are unavoidable and are directly, reasonably and necessarily incurred by the Contractor as a result of the termination;

(b) those Termination Costs have not already been recovered by the Contractor (including as part of the Contract Price);

(c) the Contractor substantiates that those costs have been or will be incurred to the Customer's satisfaction (acting reasonably);

(d) those costs relate exclusively to the Deliverables and would not have been incurred by the Contractor but for the termination; and

(e) the Contractor has not been able to mitigate those costs despite complying with its obligation under clause 25.3 of Part 2 of the Customer Contract.

40. Transition Out

TRANSITION OUT PERIOD

40.1 The **Transition Out Period** for a Deliverable (each a **Relevant Deliverable**) starts on the date on which a Termination Notice is given for the Customer Contract the extent the Termination Notice relates to that Relevant Deliverable, and ends on the date on which the Customer gives the Contractor a Notice in Writing stating that the Transition Out is complete.

TRANSITION OUT PLAN

40.2 At the commencement of a Transition Out Period, the Parties must negotiate in good faith to agree as quickly as possible a plan for the Transition Out (**Transition Out Plan**) including:

(a) the steps, tasks and activities required to complete Transition Out and timetable for those steps, tasks and activities;

(b) a resources inventory which sets out the resources required to supply the Relevant Deliverables; and

(c) the time at which, and circumstances in which, the Contractor will cease supplying the Relevant Deliverables.

40.3 If the Parties do not reach agreement on the Transition Out Plan within 30 Business Days (or as otherwise agreed in writing between the parties) after commencement of the applicable Transition Out Period, the Contractor must provide the assistance required by the Customer

(acting reasonably), at the times required by the Customer (acting reasonably). The directions issued by the Customer under this clause will collectively constitute the Transition Out Plan.

40.4 The Contractor may not charge any amounts for preparing a Transition Out Plan.

TRANSITION OUT ASSISTANCE

40.5 During a Transition Out Period, the Contractor must:

(a) perform all of the steps, tasks and activities allocated to the Contractor as the Contractor's responsibility in the Transition Out Plan at the times and in the manner specified in the Transition Out Plan;

(b) provide any other assistance, and perform all other steps, tasks and activities, required by the Customer or any nominee of the Customer (acting reasonably) to complete the Transition Out;

(c) to the extent that the Relevant Deliverables are Non-Recurring Services:

(i) deliver to the Customer copies of all work in progress relating to Relevant Deliverables that has been created or developed (**WIP**); and

(ii) permit (including granting all necessary licences and providing all necessary training) the Customer and its Personnel to use the Contractor's methodologies to the extent necessary to allow the Customer and its Personnel to complete WIP; and

(d) provide any training required by the Customer to permit the Customer or any members of its Personnel to understand the Relevant Deliverables (and in the case of any WIP, to use and further develop that WIP),

(Transition Out Assistance).

40.6 Within 10 Business Days after the date on which the Transition Out Period commences (or such later date as agreed between the Parties in writing), the Contractor must (to the extent it has not already done so) give the Customer the most up to date copy of the New Material.

40.7 If the Relevant Deliverables are Non-Recurring Services, the Contractor must cease supplying those Relevant Deliverables on the date on which the Contractor receives that Termination Notice.

40.8 If the Contractor ceases to supply a Relevant Deliverable, the Contractor is not entitled to, and must not, give the Customer a Tax Invoice for the Price to the extent it relates to those Relevant Deliverables, unless the amount relates to the period before the date on which the Contractor was required to cease supplying those Relevant Deliverables.

COSTS FOR TRANSITION OUT

40.9 The Customer is not obliged to pay any amount for the Transition Out Assistance:

(a) to the extent it can be supplied using the same Personnel that the Contractor uses to supply the Relevant Deliverables or any other Deliverables where the Services provided by those Personnel have already been paid by the Customer (the principle being that the Contractor is not required to commit additional resources for transition out without further negotiation); or

(b) if the Customer gave the Contractor a Termination Notice for cause under any of clauses 6.34 or 25.2 of Part 2 of the Customer Contractor, clauses 14.10 or 37 of these Additional Conditions or otherwise as a result of an act or omission of the Contractor or any of its Personnel.

40.10 If clause 40.9 of these Additional Conditions does not apply, the Customer must pay for any Personnel required by the Contractor to supply the Transition Out Assistance which are in addition to the Personnel the Contractor uses to supply the Deliverables. The Price for that Transition Out Assistance will either be:

(a) agreed and set out in the Transition Out Plan; or

(b) calculated on a time and materials basis using rates approved by the Customer in writing up to a maximum approved by the Customer in writing.

41. Access to Site

41.1 The Contractor must comply with all of the Customer's policies and procedures that apply to the Site, as updated by the Customer from time to time.

42. Changes in Laws

42.1 If the Contractor is required to comply with any Laws under the Customer Contract, the Contractor must comply with those Laws as they exist from time to time.

42.2 The Contractor must comply with clause 42.1 at its own cost unless the change in Law affects only the rail industry. If the change in Law affects only the rail industry, the Contractor may submit a contract variation if the change in Law results in material additional costs to the Contractor in the provision of the Services under the Customer Contract.

42.3 **"Laws"** for purposes of this clause 42 include Statutory Requirements, statutes, regulations, by-laws, ordinances or subordinate legislation, standards and codes of conduct.

Schedule 12: PIPP

Version control sheet

Document Version	Date	Edited by	Reason/nature of changes
0.1	17/01/2017	HSF	Creating first draft of DP3 implementation content for ST review and update.
0.2	02/03/2017	ST and Frequentis meeting	Group review of draft v0.1.
0.3	06/03/2017	HSF / Sydney Trains	Tidy up updates to v0.2.
0.4	08/03/2017	Frequentis	Review and inputs by Frequentis
0.5	15/03/2017	HSF / Sydney Trains	Review of Frequentis amendments and inclusion of initial Sydney Trains responses to internal actions.
0.6	3/4/17	ST	Version sent to Frequentis – further updates required.
0.7	04/04/2017	Frequentis	Review by Frequentis
0.8	05/04/17	ST	JG comments
0.9	05/04/17	Sydney Trains/Frequentis	Meeting updates from meeting 5 April 2017
0.10	07/04/17	HSF/ST	Post-meeting updates and read through amendments
0.11	11/04/17	ST/HSF	JG comments
0.12	12/04/2017	HSF	Review of Frequentis draft.
0.13	12/04/2017	ST final review	
0.14	13/04/2017	HSF	AAD language added to payment milestones.

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Section A – Overview

1 Introduction

1.1 The Customer is establishing a new Rail Operations Centre (**ROC**)

1.2 The Customer wishes to procure the design, installation, testing and implementation of new technologies at the Site which will replace the current rail operation technology and provide enhanced capability to improve key 'day of operations' processes (the **Project**).

1.3 The Project consists of the development of three new technology systems (the **Applications**). These Applications include:

a) DTTS provided by Quintiq Pty Ltd;

b) IMS provided by the Contractor; and

c) CIMS provided by Thales Australia Limited.

1.4 The Customer has engaged Ajilon Australia Pty Ltd as its Systems Integrator, responsible for acting as the Customer's agent to oversee the technical management of the Project (the **Systems Integrator**).

1.4A The Parties acknowledge that this Customer Contract has been developed as follows:

a) an ECI Contract was entered into by the Parties on 24 December 2014. The output of the ECI Contract was a High Level Solution Design and BAFO;

b) on 15 October 2015 this Customer Contract was entered into by the Parties as the 'Detailed Design Contract. The Detailed Design Contract refined the technical scope of the IMS that was developed in the ECI Contract;

c) Change Request 1 was executed on or about 25 February 2015 to provide additional funding for Release 1 Detailed Design and additional funding for Release 1 implementation work;

d) Change Request 2 was executed in July 2016 to add in REM Mobile functionality and system administration services;

e) Change Request 3 was executed to provide for REM Mobile deployment services and REM 2016.2 development and delivery incorporating Customer requirements; and

f) Change Request 4 was executed to expand the scope of work under the PIPP to include all work from Detailed Design for Release 1 through to testing and implementation of Release 1.

As at the date of Change Request 5, the scope of this PIPP is from Detailed Design for Release 1 through to implementation of Release 1 and Detailed Design for Release 1-Tranche 2 through to the implementation of Release 1-Tranche 2.

1.5 By implementing the Project the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail: Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay**: Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15% by 2018.
Increased operational performance and opportunity for timetable enhancements: Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay:** Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the services back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The Project will reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer information during delays: Improving the customers' ability to make decisions about their transport options.	**Reduced Customer Perceived Delay:** Improvements to the timeliness, relevance and consistency of customer information, particularly during disruption, will reduce the customers' perceived time of their journeys by 11% by 2018.
Better realising the benefits of future investments in rail capacity: Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function:** The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC infrastructure design requirements.
A new world-class operating centre and culture: Transforming the way 'day of operations' activities are managed within the Customer, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment:** The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service: Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX:** The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability: Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX:** enabled by new systems, process improvements and colocation.

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of design, build, test and deployment of IMS component of the Project.

2 Overview of Scope of Work and Project Delivery Model

2.1 Phased Approach

2.1.1 The Project shall be delivered as a multi-release project comprising the following releases:

a) **Release 1**: IMS implemented as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the Contractor, as well as customised TIBCO middleware delivered by the Systems Integrator. The Customer's AAD of Release 1 will be when IMS achieves 45 days of Clear Running in the Production Environment.

b) **Release 1-T2**: Enhanced IMS implemented as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the Contractor, as well as customised TIBCO middleware delivered by the Systems Integrator. The Customer's AAD of Release 1-T2 will be when IMS achieves 45 days of Clear Running in the Production Environment.

c) **Release 2**: CIMS implemented separately as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the CIMS Key Contractor, as well as customised middleware delivered by the Systems Integrator.

d) **Release 3**: the integration of the Applications with each other and into the Customer Environment. This entails the provision of upgraded Licensed Software by the Contractor, as well as additional customisation of middleware delivered by the Systems Integrator. Release 3 involves the implementation of the System. The Customer's AAD of Release 3 will be when IMS achieves 45 days of Clear Running in the Production Environment.

e) **Release 4**: the deployment of the System into the Site, being the Rail Operations Centre in Alexandria, NSW, Australia or such other location as specified by the Customer to the Contractor in writing from time to time.

2.1.2 Release 1 – Tranche 2 is the second release of the REM which was previously intended to be carried out as part of a later release (being Release 3). Release 1-T2 will now be deployed as a stand-alone release into the Customer Environment. For the purposes of Release 1-T2, Thales Australia Limited is not a Key Contractor (as that term is defined in the Additional Conditions).

2.1.3 As at the date of Change Request 5, this Customer Contract is for Release 1 and Release 1-T2 only. The Parties acknowledge and agree later releases may be incorporated into this Customer Contract by way of a Change Request once the scope for those later releases has been agreed.

2.1.4 Included in the initial three releases will be the following activities:

a) **Detailed Design**: Detailed Design for Release 1 of IMS and Release 1-T2 is part of this Customer Contract.

b) **Build Phase**: comprising the configuration and customisation of the Licensed Software by the Contractor. This phase additionally involves customisation of the TIBCO middleware by the Systems Integrator.

c) **Data Phase**: which is a subset of the Build Phase and comprises the identification and configuration of data required to enable the Licensed Software to achieve full functionality and performance. The majority of this work is performed by the Systems Integrator with the Contractor providing necessary assistance.

d) **Testing Phase**: comprising testing performed at the Contractor's site, as well as testing performed in conjunction with the Systems Integrator and Customer at the Site.

e) **Deployment**: comprising all necessary activities required to install the Licensed Software into the Customer Environment.

f) **Maintenance and Support**: commences when the Licensed Software provided in each Release Goes Live in the Production Environment. Maintenance and Support is contained in a separate contract between the Customer and the Contractor.

2.1.5 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional Services and Deliverables agreed by the Parties as being the responsibility of the Contractor; and

b) perform all other services, functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i) reasonably related to the Services or Deliverables described in this PIPP; or

ii) reasonably required for the supply of the Services and Deliverables described in this PIPP.

3 Delineation of Responsibilities

3.1 Role of the Customer

3.1.1 The Customer is responsible for:

a) establishing all necessary contractual arrangements with the Key Contractors;

b) providing commercial management of the Systems Integrator and the Key Contractors;

c) providing access to the systems required by the Contractor as set out initially in the Initial Requirements and now in the Updated Requirements;

d) providing the necessary CSI required by the Contractor in a timely manner (including any software reasonably required by the Contractor); and

e) provisioning and setting up of hardware on which the Licensed Software will be hosted as detailed in Module 3.

Customer Supplied Items to be provided by the Customer are detailed in section 22.

3.2 Role of the Contractor

3.2.1 The Contractor must:

a) support the Systems Integrator as necessary to implement the Project;

b) collaborate with the Customer and the Key Contractors;

c) customise and/or configure the Licensed Software to deliver the Customer's functional and non-functional requirements agreed for the relevant Release;

d) provide the relevant version of the Licensed Software as applicable to the relevant Release;

e) provide suitably experienced and qualified Personnel;

f) provide all Services detailed in this Customer Contract; and

g) provide all Deliverables detailed in this Customer Contract,

as further described in this PIPP.

3.3 Role of the Systems Integrator

3.3.1 The Systems Integrator shall:

a) act as the Customer's agent to manage the end to end delivery of the System;

b) use all reasonable endeavours to resolve disputes at the technical level prior to following the escalation path detailed in the governance model set out in Appendix J (to the extent of any inconsistency between clause 22 and Appendix J, Appendix J will prevail);

c) to the extent detailed in this PIPP, consult, liaise or manage the Services and Deliverables provided or performed by the Key Contractors;

d) oversee the implementation of Release 1 and Release 1-T2;

e) configure the TIBCO middleware to enable integration of REM into the Customer Environment; and

f) provide suitably experienced and qualified Personnel.

4 Definitions

Capitalised terms which are not defined in this PIPP have the meaning given to them in the Order Documents or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

AAD means 45 days of Clear Running after the Licensed Software is in the Production Environment as further specified in Section 2.1.1 of this PIPP.

Build Phase means:

a) for Release 1: the phase described in Section 8 of this PIPP; and

b) for Release 1-T2: the phase described in section 14 of this PIPP.

CIMS means the Customer Information Management System.

CAPS means Critical Application Platform Services. CAPS is a software tool used by Frequentis for the configuration of the Licensed Software for testing in the non-production environment.

Clear Running occurs when the Licensed Software achieves uninterrupted performance in the Production Environment without a Severity 1 or Severity 2 Defect (as defined in section 9.7 of the PIPP and section 16.6 of the PIPP) arising. For the avoidance of doubt, Clear Running only applies to the performance of the Contractor's Licensed Software and not the configuration of the Customer's data, TIBCO middleware, Customer's Environment nor any 3rd party product or service.

Configuration and Customisation means the activities to be undertaken during the Build Phase, as described in Section 7.3 and section 14 of this PIPP.

Cross Stream Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract of this PIPP.

Customer Environment means the equipment, software, systems and other infrastructure owned, leased or licensed by the Customer with which the System must integrate, be compatible and interoperate.

Data Cleansing means the process of detecting and correcting corrupt or inaccurate records of a Customer supplied data set.

Data Configuration means manipulation of the customer data in to an appropriate format to meet the requirements set out in section 8.4 and section 15.4 of this PIPP and the successful insertion of the data into the System.

Data Management means the activities described in Section 8 and section 15 of this PIPP.

Data Phase means:

a) for Release 1: the phase described in Section 8 of this PIPP; and

b) for Release 1-T2: the phase described in Section 15 of this PIPP.

Data Profiling means the identification and extraction of source date relating to IMS from the Customer's system as further described in Section 8.3.1 and section 15.2.1of this PIPP**.**

Data Profiling Team means the Systems Integrator's team responsible for Services and Deliverables as detailed in Section 8.3.1 of this PIPP.

Deployment (Release 1) Phase means the phase described in Section 10 of this PIPP.

Deployment (Release 1-T2) Phase means the phase described in Section 17 of this PIPP.

Detailed Design Contract means the Contract entered into by the Customer and Contractor dated 15 October 2015.

Detailed Design Documents means:

a) each document that is developed by the Contractor as part of the High Level Solution Design Phase, the Detailed Design (Release 1) Phase and the Detailed Design (Release 1 – Tranche 2) Phase and accepted by the Customer; and

b) the detailed functional specifications and technical specifications for the System developed by the Contractor during the Build and Test Phases for Release 1 and Release 1-T2 and accepted by the Customer.

The Detailed Design Documents set out the overall scope of the System as updated or replaced from time to time in accordance with this PIPP or otherwise in accordance with the Customer Contract.

Detailed Design Phase means:

a) for Release 1, the Detailed Design (Release 1) Phase; and

b) for Release 1-T2, the Detailed Design (Release 1-T2) Phase.

Detailed Design (Release 1) Phase means the phase described in Section 5 of this PIPP.

Detailed Design (Release 1-T2) Phase means the phase described in Section 13 of this PIPP.

DMC means Data Management Client; the REM thick client for configuration management supplied by the Contractor.

DTBRS means the Detailed Technology Business Requirements Specification developed by the Customer during the Detailed Design Phase and updated from time to time.

DTTS means the Day of Operations Timetable System provided to the Customer by Quintiq Pty Ltd.

ECI Contract means the Early Contractor Involvement Contract that was entered into by the Parties on 24 December 2014.

EMC means Emergency Management Client.

ERD means Entity Relationship Diagram.

ERM means Enterprise Release Management.

Entry Criteria for a Phase means the criteria that must be met before the Contractor is entitled to commence the work for that Phase, as set out in this PIPP.

Go Live means, when IMS has been deployed into the Production Environment and is ready for operational use.

High Level Solution Design Phase means the phase undertaken during the ECI Contract from which, amongst other Deliverables, the High Level Detail Design and BAFO were provided to the Customer by the Contractor.

HP ALM means Hewlett Packard Application Lifecycle Management.

IMS means the Incident Management System provided by the Contractor to the Customer under this Customer Contract and as set out in the Initial Requirements.

Initial Requirements means the requirements set out in Appendix K of this PIPP.

Initial Data Load means priming of the Licensed Software with relevant customer data in the first instance.

Interface means each interface between IMS and the Customer Environment for Release 1 and Release 1-T2, and the Applications for Release 1-T2, unless specified otherwise and as detailed in the SAD in Appendix A and the Interface Specifications in Appendix A or as per outputs developed during the Release1-T2 Detailed Design Phase.

Interface Documentation means a description of each Interface, such as SIRI and Notification Interface, including XML schema definition where applicable detailed in the SAD in Appendix A and the Interface Specifications in Appendix A.

Issues Register has the meaning given to that term in Section 21.4.1 of this PIPP.

ITSM means the Contractor's Defect Reporting Tool.

Key Contractor means the Contractors engaged by the Customer to deliver their respective part of the ROC Technology Solution including the Systems Integrator.

Load and Performance Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

Master Data means a description of Master Data import definitions, in the form of an Excel spreadsheet describing the mandatory fields.

MDM means Mobile Device Management.

Non Production Environment means a non-operational environment for development and testing purposes into which the Software may be installed, which is not processing live data, which is not running any operations of the Customer and which has not been deployed to permit any users to access live data. Non-Production environments include development, hot and cold standby, high-availability, active-active (load balanced) environments and test environments.

Operational Acceptance Testing (OAT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents.

PIV means Post Implementation Verification which is an activity verifying that REM has been successfully deployed to the Production Environment, that it is ready for business operations to 'go-live' and that no deployment roll back is required.

Product means the licensed software provided by the Key Contractor.

Production Environment means the real-time staging of programs that run an organisation are executed, and includes the personnel, processes, data, hardware, and software needed to perform day-to-day operations

Program Maintenance Phase means the phase described in Section 12 of this PIPP.

Project has the same meaning given to that term in Section 1.2 of this PIPP.

Project Management Plan means the plan described in Schedule 2 of this Customer Contract.

Project Preparation Phase means the activities to be performed by the Contractor prior to initiating the Detailed Design Phase.

Project Schedule means the Project Schedule jointly developed by the Customer, the Contractor and Key Contractors detailing the activities to be performed, their interdependencies and the related timeframe for those activities and as updated from time to time by the Parties, the current version of which is set out in Appendix C.

REM means the Railway Emergency Management application provided by the Contractor and includes:

a) REM 2016.R1;

b) REM Mobile 2016.R1

c) REM 2016.R2;

d) REM Mobile 2016.R2;

e) REM 2017.R2; and

f) REM Mobile 2017.R2.

REM 2016.R1 means the Contractor's standard software delivered as a part of Release 1, customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM 2016.R2 means the Contractor's standard software delivered as a part of Release 1, customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM 2017.R2 means the Contractor's standard software delivered as a part of Release 1-T2 customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM Data Model means a description of the REM data model in the form of an ERD.

REM Mobile 2016.R1 means the Contractor's standard software as customised to meet the Customer's Release 1 mobility requirements as documented in DTBRS for IMS Notifications version 0.3.

REM Mobile 2017.R2 means the Contractor's standard software delivered as a part of Release 1-T2 customised to meet the Customer's Release 1-T2 mobility requirements defined in the Requirements.

Requirements means, for each of Release 1 and Release 1-T2, the Initial Requirements during the Detailed Design Phase or the Updated Requirements during the Implementation Phase.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC means the Rail Operations Centre.

ROC Technology Solution means the Day of Operations Timetable System, Incident Management System, Customer Information Management System and TIBCO middleware integrated into the Customer's Environment in accordance with the Customer's requirements.

Security and Penetration Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

SAD means the Solution Architecture Document detailed in Appendix A.

Software Build Documents means the following subset of Deliverables for Release 1-T2:

a) Functional Specification;

b) Architecture Specification; and

c) Integration Specification.

Systems Integration Testing (SIT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

System Testing (ST) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents) of this PIPP.

SIRI means Service Interface for Real-time Information, a protocol for that allows distributed systems to exchange real time information.

System means:

a) the Incident Management System supplied by the Contractor; and

b) TIBCO interfaces developed by the Systems Integrator,

as customised and configured in accordance with the Customer's Requirements.

Systems Integrator has the meaning in Section 1.4 of this PIPP.

System Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

TEMS means Technical Environment Management Strategy.

Testing Phase means the phases described in Section 9 and section 16 of this PIPP.

TIBCO means *The Information Bus Company's* middleware product that provides integration, analytics and event information processing.

TMT means Test Management Tool.

TOM means Test Objective Matrix.

TSR means Test Summary Report as described in Section 7.4 and section 16.4 of this PIPP.

Updated Requirements means the Initial Requirements that are updated in the Detailed Design Documents.

Unit Testing (UT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

Validation means confirmation by examination and through provision of objective evidence that the requirements for a specific intended use or application have been fulfilled.

Verification means confirmation by examination and through provision of objective evidence that specified requirements have been fulfilled.

Web Portal means the REM thin client for read only incident investigations, audit log viewer and standby client.

Section B – Release 1

5 Detailed Design (Release 1) Phase

5.1 Overview

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design Documents all of the Requirements (based on the Initial Requirements) and develop the Detailed Design Documents for Release 1 of the System.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase (as specified in Section 5.3) are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase (as specified in Section 5.4) are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase are specified in the table below:

#	Criterion	Description
1	Previous Phase Discharged	All Services that the Systems Integrator is required to supply during the Project Preparation Phase have been supplied.
2	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
1	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Systems Integrator as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensuring all required Systems Integrator Personnel are present at the meeting(s); c. chairing and presenting the System meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtaining participant approval of contents.
2	Participate in all necessary workshops with the Customer, the Systems Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes to those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
3	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
4	Develop the Detailed Design Documents for the System for Release 1.
5	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Systems Integrator configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of Release 1 to be implemented is understood by all parties.
6	Conduct a risk management workshop with the Customer, the Systems Integrator and all relevant Customer stakeholders to identify and agree on risks to Release 1.
7	Provide the Key Contractors with all the necessary assistance reasonably requested by the Key Contractors during the Detailed Design (Release 1) Phase.
8	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the System) to enable the Key Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4 of this PIPP.
9	Do all other things necessary to develop and supply the Deliverables described in section 5.4 of this PIPP and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Detailed Design Deliverables

5.4.1 The Systems Integrator is responsible for the following Deliverables with appropriate input from the Contractor (refer to Appendix F for allocation of accountabilities and responsibilities):

a) The Transformation and Change Deliverables specified in the table below are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Systems Integrator during the High Level Solution Design Phase.

b) Where the Systems Integrator must contribute to a Deliverable specified in the table below, the Contractor must work with, contribute to and provide all reasonable assistance requested by the Systems Integrator to complete the relevant Deliverable.

c) The Systems Integrator must, in collaboration with the Key Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase. The approval of each Deliverable will be the responsibility of the Customer (or the Customer's nominee).

#	Deliverable	Description	Approval	Status as at 19 August 2016
Technology Deliverables				
1	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms and technology required to deliver the functional and non-functional requirements. The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. document overview; b. document inputs; and c. phase scope. Systems architecture: a. high level conceptual overview; b. level 2 business processes; c. application usage view; d. system integration view; e. application structure view; f. information architecture (including reference data requirements); g. infrastructure usage view; h. implementation and deployment view; and i. manual integration. Rationale and justification for detailed design architectural approach: a. rationale;	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		b. architecture risks; c. architecture issues; d. architecture constraints; e. architecture assumptions; f. architecture decisions; and g. architecture dependencies.		
2	Release 1 Functional Specification	The Release 1 Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the IMS meets the DTBRS that shall be developed by the Customer during the Detailed Design Phase. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)	Closed
3	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability; e. manageability; f. performance; g. portability; h. reliability; i. reporting; j. scalability; k. security; and l. usability.	The Customer (or its nominee)	Closed
4	Release 1 Integration Specification	The Release 1 Integration Specification describes the high level integration points between the IMS and other systems in the Customer Environment. A detailed interface specification for each Interface will be created by the Systems Integrator during the Build Phase. The following subjects are included in the Release 1 Integration Specification, one entry for each integration service:	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		a. high level data flows between applications to support the business processes; b. data objects required by consumer – request; c. data objects available from consumer – response; and d. data object transformations required. The Release 1 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each Interface to be created by the Systems Integrator during the Build Phase will describe the relevant Acceptance Criteria for each Interface.		
5	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)	Closed
6	Release 1 Data Management Plan	This document defines: a. the design, build, control and data management activities required to ensure data quality of all data (reference data, master data and transactional data) within IMS, based on business rules provided by the Customer, and effective and efficient system integration of IMS with other systems in the Customer Environment; and b. a high-level approach to management of all data within IMS which aligns with the approach outlined in the SAD.	The Customer (or its nominee)	Closed
7	Release 1 Data Technical Analysis Outputs	Contribute to Release 1 Data Technical Analysis. Outputs must include: a. Data Requirement Classifications (Master Data, Migration Data, BI data); b. Data Migration Requirements and Rules; and c. Data quality definition (at data attribute levels). Release 1 Data Technical Analysis Outputs also includes: 1. for each type of reference data and Master Data used by IMS (as appropriate):	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		a. the real-world object type represented by that data set; b. the recommended data maintenance method(s) in IMS; c. the relevant SME(s), functional owner(s), source of requirement and/or Customer source from which the data may be obtained; d. whether IMS can play the role of DMA source for that data; e. the volatility of that data; and f. data translations (if any) required to integrate with existing Customer systems 2. for each type of master or reference data requested by IMS from other systems in the Customer Environment: a. what data is required in the request and response messages; b. the business rules governing each message; and c. how those business rules are enforced; 3. for each type of transactional data flowing between IMS and another system (in either direction): a. the source and target systems; b. the message type and message header type; c. any encryption, security or certification considerations; d. the methods used to handle non-compliant data in the source system; e. any record selection filters required; and f. any record level transformations required.		
8	Updated Technology Implementation Strategy	Contribute to the development of the Updated Technology Implementation Strategy being developed by the Systems Integrator. The Updated Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the System, including, at a minimum: a. personnel and organisation; b. implementation approach, including: i. releases; ii. system Verification and Validation; iii. system change management;	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		iv. release and deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for Go Live; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. Verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function.		
9	Release 1 Technology Implementation Plan (Template)	The Release 1 Technology Implementation Plan (Template) will be developed and agreed. The plan will outline the plan approach for the roll out of the relevant components for Release 1. The final version of Release 1 Technology Implementation Plan will be developed during the Build Phase and provide a detailed plan and schedule of activities to deploy the System into the Customer Environment. It must address training, development of, and installation of the IMS into the Customer Environment, handover to the Customer from the Contractor, Go Live and roll back. The final version must be provided at least 40 Business Days prior to the anticipated deployment date for Release 1.	The Customer (or its nominee)	Closed
10	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the Systems Integrator. The Technology Test Strategy refers to the program test framework and must include the following: a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability; assumptions; test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; Defect	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document revision and history; and i. Approvals.		
11	Updated Project Management Plan	Contribute to the development of the Project Management Plan being developed by the Systems Integrator. Project Management Plan submitted by the Contractor during the High Level Solution Design Phase shall be used as the base document and will be updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The Project Management Plan must specify, as a minimum, the following: a. current project status; b. project overview; c. scope and deliverables; d. solution approach, including: i. architecture and phase approach; ii. organisation change management; and iii. delivery approach; e. budget and schedule; f. dependencies; g. roles and responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 5.4 of this PIPP; and k. key risks and issues.	The Customer (or its nominee)	Closed
12	RACI	Contribute to the RACI Deliverables being developed by the Systems Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Key Contractors and the Customer. Note: the output of this Deliverable is included in Appendix F.	The Customer (or its nominee)	Closed
13	Agreed Final Contract	The Customer Contract will incorporate certain detailed design activities. The Customer Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor	Closed
14	Detailed	The Detailed Design, Implementation and Support	The	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
	Implementation & Maintenance Phase PIPP	PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	Customer and Contractor	
15	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Key Contractors (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)	Closed
16	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the Systems Integrator. The Release 1 System Test Plan describes how the testing will be delivered for the Release 1 System Test phase and must include: a. test plan identifier; b. references; c. introduction; d. test objectives; e. test items; f. software risk issues; g. features to be tested and traceability; h. features not to be tested and reasons; i. approach including the use of stubs, simulators etc; j. item pass/fail criteria (if different from strategy); k. suspension criteria and resumption requirements (if different from strategy); l. test deliverables; m. environmental needs; n. staffing and training needs (if different from strategy); o. responsibilities; p. schedule of tasks and assigned staff; q. planning risks and contingencies; r. approvals; and s. glossary.	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
17	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the Systems Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other Deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)	Closed
18	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the Systems Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. booking and reserving test systems; b. tracking environment changes; c. managing environment contention; d. code/defect management (code promotion processes); e. environment scheduling; f. configuration tracking; g. data management (extracts, transforms loads); and h. managing interdependent projects.	The Customer (or its nominee)	Closed
Transformation and Change Deliverables				
19	Operating Model	Contributing to the development of the Operating Model being developed by the Systems Integrator. The Operating Model must document and /or identify: a. best practice levels 2-4 process flows; and b. capability gaps in systems and processes. The process model will conform to best practice principles. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation.	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Best practice process flows Deliverable description**: The best practice process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following: a. best practice levels 2-4 process flows; b. Validation of processes against real life scenarios. **Capability gaps in systems and processes Deliverable description**: Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended best practice process flows to confirm the changes to processes and capabilities. The key focus of this Deliverable will be on the level 4 gaps and/or variations in processes as dictated by the out of the box software technology processes.		
20	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)	Closed
21	Change Impact Analysis (Release 1)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions : a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes within the ROC. A Change Impact Analysis will be provided prior to Release 1.		
22	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the Systems Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)	Closed

5.4.2 The Parties acknowledge and agree that the Detailed Design (Release 1) Phase Deliverables marked “Closed” above were received and accepted by the Customer during the Detailed Design Phase.

5.5 Exit Criteria

The Exit Criteria for Detailed Design (Release 1) Phase are:

#	Criterion	Description
1	Completion of all Detailed Design Deliverables	The Customer has accepted the Detailed Design Deliverables set out in section 5.4 of this PIPP.

6 Not used

7 Build Phase (Release 1)

7.1 Overview

7.1.1 The purpose of the Build Phase (Release 1) is to:

a) configure and customise the Licensed Software to fulfil the requirements specified in the Updated Requirements specified in Appendix A;

b) provide alpha and beta versions of the Licensed Software to the Customer to enable early visibility of the functionality of the Licensed Software; and

c) in collaboration with the Systems Integrator, customise the Licensed Software to interface with the TIBCO middleware and other Customer systems as detailed in the SAD.

7.1.2 The Contractor must ensure that:

a) all of the Services and Deliverables that it is obliged to supply under the Build Phase (Release 1) are supplied and completed;

b) it will work collaboratively with the Systems Integrator to deliver the Services and Deliverables; and

c) all Deliverables that it is obliged to supply under the Build Phase (Release 1) are accepted by the Customer, on or before the relevant date(s) specified in the Project Schedule.

7.2 Entry Criteria

7.2.1 The Entry Criteria for the Build Phase (Release 1) are specified in the table below:

#	Criterion	Description
1	Detailed Design (Release 1) Phase completed to necessary level to start the Build Phase (Release 1)	All Services that the Contractor is required to supply during the Detailed Design (Release 1) Phase have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1) Phase.
2	Technical Documents Approved	The Customer has accepted all Deliverables supplied in the Detailed Design (Release 1) Phase or, in the Customer's sole and absolute discretion, those Deliverables were at the necessary level to start the Build Phase (Release 1). Where one or more Deliverables in the Detailed Design (Release 1) Phase have not been accepted by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.

7.3 Services

7.3.1 Subject to section 7.2, the Contractor must supply the following Services for the Build Phase (Release 1):

#	Description
1	**Licensed Software (REM 2016.R1)** The Contractor shall Customise the Contractor's standard Licensed Software as detailed in the Initial Requirements in Annexure A to develop REM 2016.R1.
2	**Licensed Software (REM Mobile 2016.R1)** The Contractor shall Customise the Contractor's standard Licensed Software detailed in the Initial Requirements in Annexure A to address the Release 1 Mobility requirements documented in DTBRS for IMS Mobile Notifications Version 0.3
3	**Licensed Software (REM 2016.R2)** Customisation of REM 2016.R2 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2 based on the DTBRS which incorporates REM Release 2016.R2 and REM Mobile 2016.R2.
4	**Licensed Software (REM Mobile 2016.R2)** Customisation of REM Mobile Release 2016.R2 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2 based on the DTBRS which incorporates REM Release 2016.R2 and REM Mobile 2016.R2.
5	**Licensed Software (QR Code Configuration)** Customisation of REM Mobile 2016.R1 to enable configuration by QR code as defined in the REM Technical Infrastructure Design_NGIS v05 document for testing in the Non-Production Environments.
6	**System Testing** The Contractor will perform testing of the REM products at their development site and in accordance with the Contractor's existing in house processes. The Contractor shall provide the TSR to demonstrate, to the Customer's satisfaction, that the Licensed Software has been subjected to an appropriate level of testing to ensure it is fit for purpose.
7	**TIBCO Interfaces** As required, the Contractor shall support the Systems Integrator, including provision of technical advice and assistance to enable the Systems Integrator to develop the interfaces for TIBCO.
8	**Data Profiling** The Contractor shall support the Customer and Systems Integrator's data profiling team as detailed in Section 8.3.1, to identify and extract data for use with the IMS.
9	**REM Installation** The Contractor shall install the Licensed Software in the Customer Environment to enable the Parties to enter SAT.
10	**Data Configuration – System** The Contractor shall support the Systems Integrator as required to undertake configuration of the data as required by the Customer to enable the Test Phase to commence.

#	Description
11	Implementation of application parameters to: a. download the required parameters for a number of different configurations; b. provide respective links for QR-Code configuration capability; c. implement a setting to switch off QR code capability for production rollout.
12	Signature process services including: a. providing a REM Mobile 2016.R2 certificate for the use on a maximum of twenty Sydney Trains owned test-devices; and b. management of iPhone UDID's. Service provided until December 15 2016 unless otherwise extended in writing between the Parties.
13	Configuration process services including: a. Creation of new QR codes referring to new parameter sets for different test scenarios and/or non-production environments; b. Set-up and managing the deployment tool (Hockey) for the non-production environment; and c. Configuration of REM Mobile 2016.R1 using CAPS for Sydney Trains non-production environments. Service provided until December 15 2016 unless otherwise extended in writing between the Parties.
14	Deployment process services including: a. Providing a signed application file (*.ipa file) for management in Hockey. i. This file can uploaded to Hockey without further modification. ii. This file can be re-signed and rolled out by the customer using the customers MDM tool, without any further modification b. Management of Hockey and configuration of REM Mobile 2016.R2 using CAPS for Sydney Trains non-production environments. i. Includes rollout management. Service provided until December 15 2016 unless otherwise extended in writing between the Parties.

7.4 Build Deliverables

Updates to Detailed Design Deliverables

7.4.1 The following Deliverables that were previously provided by the Contractor shall be updated, if required, during the Build Phase (Release 1) to reflect, alternative approaches to the build, or delivery of the Services, or technological issues not contemplated during the High Level Solution Design Phase and/or the Detailed Design Phase.

7.4.2 The Contractor must supply, or provide input into the following Deliverables as set out in the RACI. The Contractor shall provide all reasonable input and feedback to the Systems Integrator to ensure the Deliverables are fit for purpose.

#	Deliverable	Description
1	Release 1 Architecture Specification	The updated Release 1 Architecture Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1).

#	Deliverable	Description
2	Release 1 Non-Functional Design	The updated Release 1 Non-Functional Design will reflect the design of the "as built" System developed during the Build Phase (Release 1).
3	Release 1 Integration Specification	The updated Release 1 Integration Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1).
4	Test Strategy	The updated Test Strategy will reflect the approach agreed between the Customer, Contractor and Systems Integrator to implement IMS for Release 1.
5	Project Management Plan	The updated Project Management Plan will reflect lessons learnt during Release 1, as well as revision in the approach to project management agreed between the Parties during the Build Phase (Release 1).
6	RACI	The updated RACI shall reflect additional Services and Deliverables identified for Release 1.
7	Technology Environment Management Strategy	The updated Technology Environment Management Strategy will reflect the lessons learnt during Release 1, as well as revision in the approach to environment management agreed between the Parties during the Build Phase (Release 1).
8	Data Technical Analysis Output (DTAO)	The Updated Data Technical Analysis Output (DTAO) will reflect the "as built" System as defined during the Build Phase (Release 1).
9	Data management Plan	The updated Data Management Plan will reflect the design of the "as built" System developed during the Build Phase (Release 1).
10	Technology Communications Plan	The updated Technology Communications Plan will reflect lessons learnt during Release 1, as well as revision in the approach to project communications agreed between the Parties during the Build Phase (Release 1).

New Build Deliverables

7.4.3 The Contractor must, in collaboration with the Systems Integrator, supply the following Deliverables as part of the Build Phase (Release 1).

#	Deliverable	Description
1	Technology Implementation Plan	The Contractor will contribute to the development of the Technology Implementation Plan being developed by the Systems Integrator. The Contractor shall base its response on the Technology Implementation Template agreed between the Parties during Detailed Design. The Technology Implementation Plan will detail and schedule the activities to deploy REM 2016.R1 and REM Mobile 2016.R1 into the Customer Environment. It must additionally address training, development of, and installation of the IMS into the Customer Environment, as well as handover to the Customer from the Contractor, Go Live and roll back (from the technology perspective).
2	Interface Documentation for SIRI (REM 2016.R1)	The Contractor will develop the REM SIRI SX Interface Documentation that includes: a. detailed mapping documentation of REM Data Model to SIRI SX Data Model; b. XML Schema Definition (XSD) for REM Incident SIRI extension; c. architecture overview / data flow diagram;

#	Deliverable	Description
		d. description of configuration options for SIRI SX REM Server module; e. description of configuration options for REM DMC; and f. SIRI SX message samples. The Contractor will collaborate with the Systems Integrator to ensure the Systems Integrator interface documentation aligns with the interface documentation developed by the Contractor.
3	Shadow Data Base Documentation	The Contractor will develop the Shadow Data Base Documentation that includes the description of the Functional Data Model including: a. master data, for example: i. users/roles; ii. contacts, occupational groups; iii. responsibility model; and iv. location configuration (location, route, route section). b. transactional data, for example: i. incidents; ii. operational consequences; and iii. tasks.
4	Interface Documentation for Notification Functionality (REM 2016.R1)	The Contractor will develop the Interface Documentation for Notification Functionality that shall include: a. restful interface specification comprising: i. URL scheme and parameter specification; ii. specification of authentication mechanism; and iii. interface versioning specification; b. XML Schema Definition (XSD) for service request/response messages; c. HTTP code specification for request/response messages; and d. request/response messages samples.
5	Documentation of the REM Data Model (REM 2016.R1)	The Contractor will develop the Documentation of the REM Data Model that shall include: a. ERD; b. Detailed entity documentation (column names, data types); c. Common attributes for: i. all data types (e.g. deactivated by, deactivated_ts, optlocking); ii. versionised REM Master Data (e.g. version_id, valid_from, valid_to); iii. imported REM Master Data (e.g. valid_from, valid_from, valid_to); and iv. data versioning principles
6	User Manual for Emergency Management Client (EMC) (REM 2016.R1)	The Contractor shall develop the User Manual for Emergency Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the EMC.
7	User Manual for Data Management Client (DMC) (REM 2016.R1)	The Contractor shall develop the User Manual for Data Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the DMC.
8	User Manual for	The Contractor shall develop the User Manual for Web Portal that includes

#	Deliverable	Description
	Web Portal (REM 2016.R1)	a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the Web Portal.
9	User Manual for REM Mobile (REM Mobile 2016.R1)	The Contractor shall develop the User Manual for REM Mobile 2016.R1 that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the mobile application.
10	IMS (REM 2016.R1) Licensed Software	The Parties acknowledge the Licensed Software was a Deliverable supplied in the Initial Implementation (Release 1) Phase of the Detailed Design Contract.
11	Licensed Software (REM Mobile 2016.R1)	The Contractor delivered the REM Mobile 2016.R1 Licensed Software to the Customer prior to 31 May 2016. **Note:** The Parties acknowledge the Licensed Software was a Deliverable supplied in the Initial Implementation (Release 1) Phase of the Detailed Design Contract.
12	System Test Summary Report (2016.R1)	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results in general composition contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; and iii. deviations from the plan; c. Defect summary
13	REM Mobile Software Update (QR Code deployment) (2016.R1)	Customisation of REM Mobile 2016.R1 to enable configuration by QR code as defined in the REM Technical Infrastructure Design_NGIS v05 document.
14	Configuration Process Documentation (2016.R1)	Documentation including details regarding the QR code functionality and how to change a configuration.
15	Deployment Process Documentation (2016.R1)	Documentation of the required steps to configure the application (*.ipa file) in CAPS and deployment of REM Mobile 2016.R1 onto Customer iPhones with the use of Hockey.
16	Hand-Over to Support Documentation (handover of non-production processes & procedures) (2016.R1)	The Hand-Over to Support Documentation covers all necessary information for the non-production mobile deployment services to be taken over by the Customer. A one day hands-on handover training.

#	Deliverable	Description
17	Update of REM Mobile Functional Specification (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
18	Update of REM Mobile Test Objective Matrix (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
19	Update of REM Mobile User Manual (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
20	Update of Requirements Traceability Matrix (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
21	Update of GAP Analysis (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
22	REM System/Software Delivery (REM Release 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery REM Release 2016.R2.
23	REM System/Software Delivery (REM Mobile 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM Mobile as defined for Software Delivery REM Mobile 2016.R2.
24	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	Contractor will Update the GAP Analysis for REM and REM Mobile Release 2016.R2 The GAP Analysis (REM and REM Mobile 2016.R2) shall be based on the DTBRS to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase. The GAP Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.
25	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	Contractor will Update the REM and REM Mobile Release 2016.R2 Functional Specification document. The Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS. Functional specifications relate to the following: a. Function involving user interaction and its user interface; and b. Function which is unattended processing such as batch

#	Deliverable	Description
		processing.
26	Interface Documentation for SIRI (REM 2016.R2)	Contractor will update of the documentation to reflect changes implemented as a part of REM 2016.R2.
27	Interface Documentation for Notification Functionality (REM 2016.R2)	Contractor will update of the documentation to reflect changes implemented as a part of REM 2016.R2.
28	Update of Documentation of the REM Data Model	Contractor will update the Data Model Documentation to reflect changes implemented as a part of REM 2016.R2.
29	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
30	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
31	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
32	Requirements Traceability Matrix for REM 2016.R2	The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for REM 2016.R2 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases.
33	Test Summary Report for System Test (REM Release 2016.R2)	Contractor will provide a summary of results from the COTS product vendor System Testing for REM 2016.R2 including a list of observations and defects in accordance with the COTS vendors' standard documentation.
34	Test Summary Report for System Test (REM Mobile	Contractor will provide a summary of results from the COTS product vendor System Testing for REM Mobile 2016.R2 including a list of observations and defects in accordance with the COTS vendors' standard documentation.

#	Deliverable	Description
	2016.R2)	

7.5 Exit Criteria

#	Criterion	Description
1	Environment	For each environment type (as described in the TEMS and Environment Specification), the Customer has provisioned and set up the necessary environment to enable the relevant tests to commence.
2	Licensed Software	The Contractor has delivered the Licensed Software to the Customer accompanied by the Systems Test Summary Report.
3	REM installation	The Contractor has installed the Licensed Software in the relevant Customer Environment for SAT.
4	Testing Criteria	The Parties have developed the testing plans and criteria relevant for the testing phase.
5	Acceptance of Deliverables	The Customer has accepted the Deliverables relevant for the Build Phase (Release 1) and, to the extent that it is responsible, the Data Phase.
6	Configuration	The Licensed Software has been configured to the extent required by the Customer to enable the Parties to enter SAT.
7	Data Base	The Systems Integrator has populated the Database with sufficient data to enable testing to commence.

8 Data Phase

8.1 Overview

8.1.1 The following Data Management services are a subset of the Build Phase (Release 1) and were Delivered during the Initial Implementation (Release 1) Phase of the Detailed Design Contract:

a) Data Management as set out in section 8.3 below;

b) Data Profiling as set out in section 8.3.1 below; and

c) Data Configuration as set out in section 8.3.2 below.

8.1.2 The Services described below are predominately performed by the Systems Integrator, in conjunction with the Customer. However, the Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are supplied and are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

8.2 Entry Criteria

8.2.1 The Entry Criteria for the Data Phase are specified in the table below:

#	Criterion	Description
1	Data Profiling	a. The Customer has established the data profiling team consisting of Customer and Systems Integrator personnel to identify sources of data

#	Criterion	Description
		within the Customer Environment to enable IMS to achieve its Functional Requirements (**Data Profiling Team**); and b. To the extent practicable, the Customer's data repositories have been identified and access granted to the Data Profiling Team.
2	Configuration Requirements	a. The Customer has established a data configuration team consisting of Customer and Systems Integrator personnel to configure the Data compiled by the Data Profiling Team in order to ensure the data is in a format compatible with the Licensed Software; and b. The Customer has compiled the necessary data to enable the Contractor and Systems Integrator to commence the configuration.

8.3 Services

Data Management Services

#	Service	Description
1	Data Cleansing and Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to perform Data Cleansing as set out in Module 9. For the avoidance of doubt, the majority of the Data Cleansing work will be performed by the Systems Integrator and Customer and the Contractor will perform a supporting role.
2	Data Management Planning	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator to undertake preparatory and administrative work in respect of the Data Cleansing and Data Analysis. The Contactor's input for this Service will be minimal as the technical analysis, review of inputs, defining the scope the work, agreement on approach (including timing), initiation of stakeholder groups, creation of templates, and establishment of tools and access to systems will be the Systems Integrator and Customer's responsibility.

Data Profiling Services

8.3.1 The Services described below have been discharged during the Detailed Design Contract and are here for historical purposes.

#	Service	Description
1	Planning/ management	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to undertake the following planning and management of the Data Profiling services: a. planning the Data Profiling services including deployment, training and support; b. management of the configuration team who are responsible for converting the raw data into a format that can be used by IMS; and c. reporting to senior management.

#	Service	Description
2	Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to undertake the following Data Analysis activities of the Data Profiling services: a. liaison with the Customer's business, technical and ROC stakeholders; and b. development of data configuration requirements and design documentation for use in conjunction with the Licensed Software.
3	Architecture	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to undertake the following Architectural activities of the Data Profiling services: a. define the technical architecture; and b. define the data architecture.
4	Programming	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to define what Oracle PL/SQL programming is required for Data Profiling services.
5	Testing	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to perform Unit Testing and System Testing of the programmed work related to the Data Profiling services.
6	Training	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to undertake training required by the Customer as a result of the Data Profiling services.
7	Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to support the Data Profiling services. This may require providing timely advice to the Systems Integrator's lead and technical analyst and programmers.

Data Configuration of REM Services

8.3.2 The Services described below have been discharged during the Detailed Design Contract and are here for historical purposes.

#	Service	Description

#	Service	Description
1	Initial Data Load and Configuration	The Contractor shall provide technical advice to enable the Systems Integrator to undertake the Initial Data Load and Configuration of the Data. The Systems Integrator's scope for the Service extends to importing Customer supplied data into a clean REM system environment: a. clarification of data structure specified in the XLS template; b. dry-run of the provided master data XLS template on the relevant development system; c. single import of the XLS template to a database on the Customer Environment (Clean Environment); and d. initial Configuration using loaded data. The Contractor's assistance will be limited to providing: (i) technical input as well as providing hands-on training as required to the nominated Systems Integrator resource; and (ii) support of one data load.
2	Configuration Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator with the loading of additional data and modifications and additions to the configured data.

8.4 Exit Criteria

8.4.1 Exit Criteria is as detailed in point 5, 6 and 7 of the Build Phase (Release 1) Exit Criteria set out in section 7.5 above.

9 Testing Phase (Release 1)

9.1 Overview

9.1.1 The purpose of the Testing Phase (Release 1) is to ensure the Licensed Software satisfies the Customer's Requirements, as well as interoperates with the TIBCO middleware and the Customer Environment.

9.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Testing Phase (Release 1) are supplied and completed;

b) testing performed by the Contractor in the Systems Test environments are documented as being fit for purpose when the Licensed Software is delivered to the Customer;

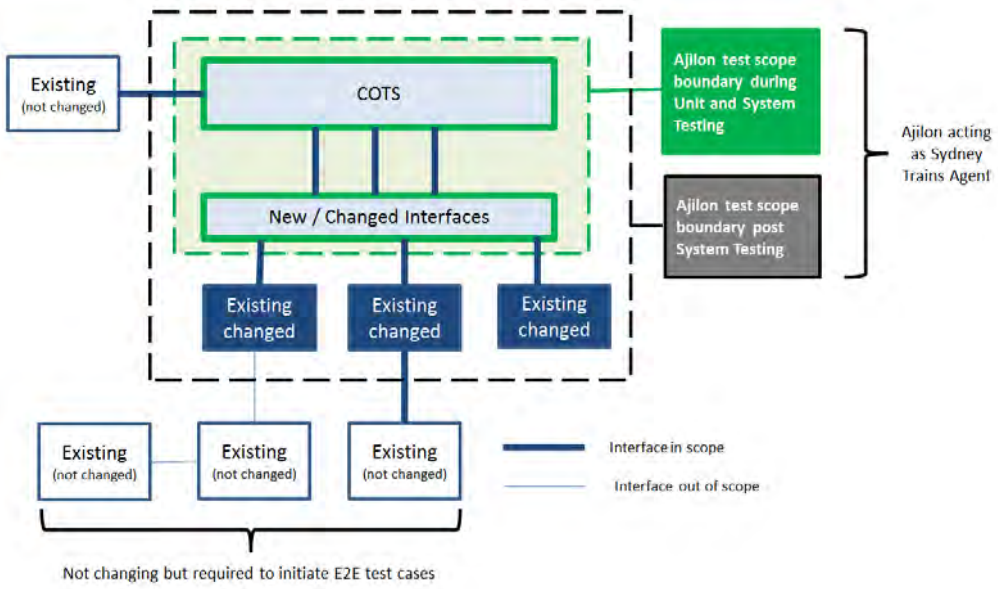
c) the Contractor demonstrates that the Licensed Software has been successfully tested in the Customer's relevant environment for SAT;

d) it provides appropriately skilled resources to assist the Systems Integrator and Customer during all other Tests contemplated in this Section 9; and

e) all Deliverables that it is obliged to supply under the Testing Phase (Release 1) are accepted by the Customer, on or before the relevant date(s) specified in the Project Plan.

9.2 Scope and Responsibilities

9.2.1 The following depicts the scope of the ROC Technology Testing and the responsibilities of each Party.



In the context of the above diagram, COTS refers to the Contractor and delivery of the Licensed Software as integrated into the TIBCO middleware (by the Systems Integrator) and the Customer Environment.

9.3 Entry Criteria

9.3.1 The Entry Criteria for the Testing Phase (Release 1) is specified in the table below. For the avoidance of doubt, the activities described below are repeatable at the commencement of each separate Test Phase.

#	Criterion	Description
1	Licensed Software is ready for SAT	a. The relevant test environment (as described in the TEMS as Schedule 2 of this Customer Contract (Agreement Documents)) has been set up and is available to commence testing; b. Verification by the Contractor that the Licensed Software has been installed in the Customer Environment (not applicable for REM Mobile 2016.R1); c. System testing of the Licensed Software has successfully met its exit criteria as demonstrated by the System Test Summary Report; d. Test Data has been imported in to the relevant test environment(s) by the Systems Integrator for either the preferred option or alternative option described below, as determined by the Customer: i. The preferred option is that: A. relevant Customer Master Data has been supplied and loaded into the test environment; and B. the Master Data has been configured by the Configuration Team in line with the Customer's business processes;

		ii. The alternative option is that: A. sample Master Data has been provided by the Contractor as agreed between the Parties; and B. sample business configuration has been provided by the Contractor; e. System Test Plan has been accepted by the Customer.

9.4 Services

9.4.1 The following Services will be performed by the Contractor either in a lead capacity, as a contributor to Services performed by the Systems Integrator, or in consultation with the Systems Integrator or Key Contractors.

#	Service	Description
1	SAT Test Phase, REM Licensed Software	The Contractor will perform SAT testing of the Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 9.5 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.
2	Test Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator provide technical assistance and advice, to support the Systems Integrator and Customer to deliver the following tests. This applies to all test phases including Cross Stream and Security testing. a. SIT Test Phase; b. UAT Test Phase (Program and Business); c. Load and Performance Test Phase; d. Operational Acceptance Testing, Test Phase; e. ERM Regression Testing (**Note:** Not applicable for Release 1); f. Security and Penetration Testing; and g. Cross Stream Testing. Test support by the Contractor is limited to Defect triage, Defect rectification, progression and regression testing of fixes affecting the Licensed Software.
3	SAT Test Phase, REM 2016.R2 Licensed Software	The Contractor will perform SAT testing of the REM 2016.R2 Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 9.5 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.

9.5 SAT Deliverables

9.5.1 The Contractor shall deliver the following Deliverables.

Deliverable	Description
SAT Test Objective Matrix (2016.R1)	A table demonstrating proposed test coverage. Test objectives state what is to be tested and are derived from the requirements and depend on the scope of the test phase.
SAT Test Cases (2016.R1)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.
SAT Test Summary Report (2016.R1)	The SAT Test Summary Report provides a summary and evaluation of the test phase based on objective data and a recommendation to move to the next stage of testing or to execute further tests in the current test phase based on results of the SAT Test. In general the SAT Test Summary Report contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; d. Recommendations to move to the next stage or to execute further tests based on results.
System Test Plan	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to prepare the System Test Plan. The System Test Plan is an outcome of the planning process. It ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the solution will support the Customer's business and stakeholder requirements
SAT Test Objective Matrix (2016.R2)	A table demonstrating proposed test coverage. Test objectives state what is to be tested. Test objectives are derived from the requirements and depend on the scope of the test phase.
SAT Test Cases (2016.R2)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement.
SAT Test Summary Report (2016.R2)	The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.

9.6 Other Test Deliverables

9.6.1 The following are Deliverables to be developed by the Systems Integrator or Customer that may require assistance and input from the Contractor. The expectation is that the Contractor's input into these deliverables will be minimal.

9.6.2 One set of Deliverables will be created for each of the following Test Phases:

a) System Testing for TIBCO and other interfaces;

b) SIT Test;

c) Load and Performance Testing;

d) User Acceptance Testing;

e) Operational Acceptance Testing;

f) Security and Penetration Testing; and

g) Cross Stream Testing.

Deliverable	Description
Test Plan	The Test Plan ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the Licensed Software will support the Customer's business and stakeholder requirements.
Test Objective Matrix (TOM)	The TOM is a table demonstrating proposed test coverage. Test Objectives state what is to be tested and are derived from the business and functional requirements and depend on the scope of the test phase.
Test Cases	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the test cases is to state how the testing will be implemented during testing and are based on the TOM.
Test Summary Report	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results In general the Test Summary Report must contain, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; and iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; Recommendations to move to the next stage or to execute further tests based on results.

9.7 Rollback option

9.8 The Contractor represents, that REM2016.R2 is a minor upgrade to REM2016.R1.

9.9 The Customer and the Contractor acknowledge and agree that there will only be a short period of time in which to test REM2016.R2. If any issues arise during the testing of REM2016.R2 that, in the opinion of the Customer, can be isolated and that do not otherwise affect the operation of the IMS, both the Customer and the Contractor will attempt to resolve those issues to the satisfaction of the Customer.

9.10 If, any issues arise during the testing of REM2016.R2 that cannot be resolved to the satisfaction of the Customer, the Customer may, in its absolute discretion, elect to proceed with REM2016.R1 instead of REM2016.R2 in which case the Contractor will remove REM2016.R2 and instead deploy REM2016.R1 in accordance with the Project Schedule.

9.11 If the decision is made to proceed with REM2016.R1 rather than REM2016.R2:

9.11.1 the Customer and the Contractor will work, in good faith, towards developing a Change Request to cover the additional work required to incorporate REM2016.R2 at a later point in time; and

9.11.2 the Customer will not consider the failure of REM2016.R2 to be a Defect in the event it decides to proceed with REM2016.R1 instead of REM2016.R2.

9.12 Defect Severity Definitions

9.12.1 The following Defect severity definitions shall apply for all Test Phases, excluding Systems Testing.

Severity 1

Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists.

Examples of Severity 1 Defects include:

a) safety issues;

b) REM or a core component of REM is inoperable.

The Customer will not take Severity 1 Defects into the next Test Phase or to the Production Environment.

Severity 2

High Impact – Assigned to major errors. Some key REM functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality, but the Defect must be resolved before the component can be migrated to the next Test Phase or to Production Environment.

Examples of severity 2 Defects include:

a) the REM or a component of REM is operable however one or more functions do not work according to the Functional Specifications or have not been delivered and no acceptable workarounds exist;

b) any issue with data accuracy or integrity which may cause confusion among the Customer end-user community.

the Customer would not usually consider taking Severity 2 Defects into the next test phase or to the Production Environment unless there were exceptional circumstances. The Customer would need to have understood and accepted the risk/impact via approval of the TSR. There is an expectation that any Severity 2 Defects would be resolved by the next release of the Licensed Software.

Severity 3

Medium Impact – Assigned to minor errors. Some functionality does not conform to the Functional Specifications or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact

on the Customer's end users. Testing can continue and the component can be migrated to the next test phase or to the Production Environment providing exit criteria are met. Examples of severity 3 Defects include REM or an REM component is operable however one or more functions do not work according to their Functional Specifications or have not been delivered and acceptable workarounds exist.

The Customer may consider (at its sole discretion) taking a small number of Severity 3 Defects into the next test phase or the Production Environment provided the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the System. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

Severity 4

Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on the Customer end users or the System. Examples of severity 4 Defects include:

a) misspelled (but not misleading) text;

a) inconsistent fonts; or

b) poor grammar.

The Customer may consider (at its sole discretion) taking a small number of Severity 4 Defects into the next test phase or the Production Environment providing the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the ROC program. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

9.13 SAT Exit Criteria:

Deliverable	Description
Test Cases	All test cases have been executed and the outcome recorded in the Contractor's Test Management Tool (**TMT**). An explanation has been provided by the Contractor to the Customer for any test case which has not been executed by the Contractor. The Parties acknowledge and agree the TMT used by the Contractor will be Jama, as compared to HP ALM used by the Systems Integrator and Customer.
Recording Defects	All Defects identified during the test phase have been recorded in the Defect Management Tool (DMT) and are available for review. The Parties acknowledge and agree the DMT used by the Contractor will be ITSM, as compared to HP ALM used by the Systems Integrator and Customer.
Severity 1 / Severity 2 Defects	No Severity 1 or Severity 2 Defects outstanding.
Severity 3 / Severity 4 Defects	An agreed action plan is in place to address outstanding Severity 3 and Severity 4 Defects, including target resolution time frame.
Defect Acceptance	The number of outstanding Severity 3 and Severity 4 Defects and the cumulative impact of these Defects on REM must be accepted by the Customer. Once all test exit criteria for the test phase have been met, the Contractor must produce a TSR to demonstrate the outcome of the testing phase. Where exit criteria have not been met, the test phase shall continue until exit criteria has been met.
Defect Deviation	Any deviation from the agreed exit criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management.

10 Deployment (Release 1) Phase

10.1 Overview

10.1.1 The Objectives for these Services are that:

a) the Licensed Software is deployed into the relevant test or Production Environment;

b) deployments into the Customer relevant environments are managed so that any disruption to the environments that can be avoided is avoided, or where avoidance is not possible, kept to a minimum;

c) deployments are managed in accordance with the Customer's Enterprise Release Framework and Change Management process.

This section encompasses the Services required to confirm the readiness of REM 2016.R1 and REM Mobile 2016.R1 for deployment into the relevant test or Production Environment.

10.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are accepted by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

10.2 Entry Criteria

10.2.1 The Entry Criteria for the Deployment (Release 1) Phase are specified in the table below:

#	Criterion	Description
1	Licensed Software	The Licensed Software has been received by the Customer from the Contractor.
2	Documentation	The Contractor has provided details of the software and hardware configurations required to enable the Licensed Software to be tested in the relevant environments (as described in the TEMS).
3	Environments	The Customer has set up the following environments in accordance with the Non Functional Specification and as described in the TEMS: a. REM Configuration; b. REM Demo; c. Development; d. System Test; e. SIT; f. UAT; g. Pre-PROD; h. PROD; i. Training; and j. Disaster Recovery*. * Out of scope for the Contractor's Services (the **Non Production Environment**).

10.3 Services

10.3.1 The Contractor will provide a Systems Administrator to provide the following Services for each Customer Non Production Environment (as defined in section 10.2.1). Unless otherwise agreed between the Parties, the Systems Administrator's role concludes on 10 December 2016 that is the scheduled Release 1 Technical Go Live Date.

10.3.2 The Systems Administrator will perform the Services described in the table below:

Service	Description
Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment. a. REM Incident Management software; and b. additional necessary software packages.
System Level Configuration	Configure REM application on system level - various configuration and start up files.
Database Set Up	Perform Application related database setups: a. including setup of database instances; b. setup of database users; c. setup of schemas; and d. setup of Oracle database recovery and backup procedures (optional, depending on system operation model).
Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. as preparation for the production environment; and c. for debugging and Defect reproducing reasons.
Schema Updates	Perform Database Schema Updates, as required.
Monitoring Tools	Installation and configuration of monitoring tools according to Customer standards.
Manage Users	Setup, manage and track users and associated access levels.
Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations.
Sanity Testing	Perform basic sanity testing of the integration and configuration
Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.

Service	Description
Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. creation of Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality); and vi. filing an error report in the Contractor's Defect Reporting Tool ITSM.
Production Support	The Contractor will provide support after REM Goes Live in the Production Environment on request from the Systems Integrator or the Customer. Unless otherwise agreed, post-production support will be priced on the T&M Rates in the PIPP.
Pre-Production and Production	
Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment. a. REM Incident Management software; and b. additional necessary software packages related to the REM product but not including third party applications.
System Level Configuration	Configure REM application on system level - various configuration and start up files. Note: Appropriate access to the systems has to be granted by the customer.
Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. for debugging and Defect reproducing reasons.
Manage Users	Setup, manage and track users and associated access levels.
Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations.
Sanity Testing	Perform basic sanity testing of the integration and configuration
Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.

Service	Description
Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. adding to the Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality).

10.4 Responsibilities

10.4.1 The Customer will:

a) establish and disseminate to the Contractor and Systems Integrator, an ERM framework to permit seamless deployment;

b) provide timely notification to the Customer's ERM team to schedule the REM deployment in accordance with the ERM framework; and

c) set up and maintain operational test environments that are functionally equivalent to the Production Environment where the Systems Integrator or Contractor needs such operational test environments to fix Defects and perform regression testing.

10.5 Deliverables

10.5.1 The Contractor shall provide, or contribute to the following Deliverables developed by the Systems Integrator.

#	Deliverable	Description
1	Handover Plan	The Hand Over Plan is a Systems Integrator Deliverable outlining: a. Technical documents required to support REM that includes as built specifications documents etc; b. Training Session(s) to be provided by the Contractor or Systems Integrator (as required) to enable proficiency in the use of REM, as well as basic support, including: i. number of students; ii. duration of course; iii. outline of content; and iv. key dates. **Note**: The Handover Plan relates to REM only and excludes the Customer Environment.
2	Post Implementation Verification Report	The Contractor shall, in conjunction with the Systems Integrator, provide any required assistance to the Customer to develop the Post Implementation Verification Report which outlines: a. the issues that arose during the Deployment (Release 1) Phase that necessitate recording; b. lessons learned from the Deployment (Release 1) Phase that may be used to mitigate further problems or repeated to ensure seamless delivery of services; and c. follow-up actions including detailing any deferred scope.

#	Deliverable	Description
3	Production and Pre-Production Installation Run-Sheets	REM Pre-Prod and Prod installation Run Sheets based on ROC Technology Implementation Plan template. The Pre-Prod Run sheet will be created in parallel with the first application installation of the Pre-Prod environment.

11 Training (Release 1)

11.1 Overview

11.1.1 The Contractor shall provide the following training to enable the Customer to use, operate, administer and maintain REM.

11.2 Services

11.2.1 The Contractor shall deliver the following Training Services to the Customer.

Item	Service	Description
1	Technical System “Train the Trainer” Training	Provision of Technical System “Train the Trainer” Training including the training materials. This training is intended for staff responsible for training the Customer staff required to operate the IMS. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functional and operational principle of an incident management system; b. explain the functionality of the IMS; c. explain the typical use cases and associated workflows; d. perform operative incident management using the IMS at an operator place independently; e. have an overview of the system actors, support structure and supplementary application documentation; and f. explain, teach and demonstrate the IMS operational content in the Customer’s learning environment. This Service includes: a. design of “Train the Trainer” training course to meet the aims outlined above; a. provision of all training materials; and b. provision of the “Train the Trainer” training course to the Customer Personnel (3 training courses, of 3 continuous days). The Customer will provide the training facilities required to conduct the courses.

Item	Service	Description
1	System Administration training	Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of REM. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. The aim of the course is to provide attendees with training to enable the attendees to: a. identify components of the REM 2016.R1 and assign them to system structures; b. explain the functionality and purpose of the individual components of REM 2016.R1, including system interfaces; c. interpret operational and technical messages of the REM 2016.R1 and analyse causes; d. carry out maintenance working steps for administration of the REM 2016.R1 components according to the system administration manual; e. carry out software update procedures for the REM 2016.R1; f. name, readout and interpret relevant log files of the REM 2016.R1; g. assess the technical and operational effects of these actions; and h. provide second level support requirements.
2	Application Administration Training	The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of REM. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functionality of REM b. explain the functionality of the REM DMC; c. explain the functional data structure of REM; d. maintain REM configuration data; e. configure the responsibility model; f. configure the track network; g. configure workflows; and h. carry out user, role and group administration. **Note:** Application Administration Training was delivered under the Detailed Design Contract.

11.3 Deliverables

11.3.1 The Contractor shall provide the following Deliverables for the training courses it will deliver to the Customer:

#	Deliverable	Description
1	Training Material Technical System Train the Trainer Training	REM Training consisting of trainer PowerPoint slide pack

#	Deliverable	Description
2	Training Material System Administration	Contractor is responsible for creating the training material for System Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual (delivered under Detailed Design agreement).
3	Training Material Application Administration	Contractor is responsible for creating the training material for Application Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual (delivered under Detailed Design agreement).

12 Maintenance and Support – Release 1

12.1 Overview

12.1.1 Maintenance and Support Services (Recurring Services) for Release 1 commences when Release 1 Goes Live in the Production Environment.

12.1.2 The Parties entered into a separate contract for the Recurring Services on or about 9 December 2016.

Section C – Release 1-T2

13 Detailed Design (Release 1-T2) Phase

13.1 Overview and purpose of Detailed Design (Release 1-T2) Phase

13.1.1 The purpose of the Detailed Design (Release 1-T2) Phase is to document and confirm in the Detailed Design Documents all of the Requirements for Release 1-T2 (based on the Initial Requirements for Release 1-T2), which will include updating the Detailed Design Documents created during Detailed Design (Release 1) Phase).

13.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1-T2) Phase (as specified in Section 13.3) are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1-T2) Phase (as specified in Section 13.4) are approved by the Customer (or its nominee),

on or before the relevant date(s) specified in the Project Schedule.

13.2 Entry Criteria

13.2.1 The Entry Criteria for the Detailed Design (Release 1-T2) Phase are specified in the table below:

#	Criterion	Description
1	The Systems Integrator has entered into an agreement with the Customer relating to the Detailed Design (Release	The Systems Integrator has entered into an agreement with the Customer for its work on the Detailed Design (Release 1-T2) Phase and is ready to work with the Contractor on the Contractor's Release 1-T2 Services and Deliverables set out in

#	Criterion	Description
	1-T2) Phase.	this PIPP.

13.3 Services

13.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1-T2) Phase:

#	Description
1	Implement and perform all the Detailed Design (Release 1-T2) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Systems Integrator as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensuring all required Supplier Personnel are present at the meeting(s); c. chairing and presenting the System meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtaining participant approval of contents.
2	Participate in all necessary workshops with the Customer, the Systems Integrator and all relevant Customer stakeholders: a. to clarify the Initial Release 1-T2 Requirements and validate those Initial Release 1-T2 Requirements; b. to identify any changes to those Initial Release 1-T2 Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1-T2) Phase.
3	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1-T2) Phase.
4	Update the Detailed Design Documents for the System as required for Release 1-T2.
5	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Release 1-T2 Requirements during the Detailed Design (Release 1-T2) Phase and how the Systems Integrator configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of Release 1-T2 to be implemented is understood by all Parties.
6	Participate a risk management workshop with the Customer, the Systems Integrator and all relevant Customer stakeholders to identify and agree on risks to Release 1-T2.
7	Provide the Key Contractors with all the necessary assistance reasonably requested by the Key Contractors during the Detailed Design (Release 1-T2) Phase.
8	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the System) to enable the Key Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 13.4 of this PIPP and Services described in this section 13.3 of this PIPP.
9	Do all other things necessary to develop and supply the Deliverables described in section 13.4 of this PIPP and Services described in this section 13.3 of this PIPP and as otherwise directed by the Customer.

13.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1-T2) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

13.4 Detailed Design Deliverables

13.4.1 The Systems Integrator is responsible for the following Deliverables with appropriate input from the Contractor (refer to Appendix F for allocation of accountabilities and responsibilities):

a) The Transformation and Change Deliverables specified in the table below are to be provided to the Customer during the Detailed Design (Release 1-T2) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Systems Integrator during the High Level Solution Design Phase.

b) Where the Contractor must contribute to a Deliverable specified in the table below, the Contractor must work with, contribute to and provide all reasonable assistance requested by the Systems Integrator to complete the relevant Deliverable.

c) The Systems Integrator must, in collaboration with the Key Contractors, supply the following Deliverables as part of the Detailed Design (Release 1-T2) Phase. The approval of each Deliverable will be the responsibility of the Customer (or the Customer's nominee).

d) The Deliverables set out in the table below will be completed and delivered by the Contractor in two phases as follows and in accordance with the dates set out in the Project Schedule:

i) to allow product customisation to commence as part of the Build Phase (Release 1 – T2) the Software Build Documents will be prioritised and completed by the Contractor prior to the remaining Release 1-T2 Detailed Design Deliverables; and

ii) all other Release 1-T2 Detailed Design Deliverables will be completed by the Contractor after Software Build Documents are in final form.

#	Deliverable	Description	Approval
Technology Deliverables			
1	Release 1-T2 Functional Specification	The Release 1-T2 Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the IMS meets the DTBRS that shall be developed by the Customer during the Detailed Design (Release 1-T2) Phase. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)
2	Release 1-T2 Architecture Specification	The Release 1-T2 Architecture Specification combines what were formally two separate Deliverables for Release 1, being: (i) the Architecture Specification and (ii) the Non-functional Design.	The Customer (or its nominee)

#	Deliverable	Description	Approval
		The Release 1-T2 Architecture Specification must describe the Release 1-T2 solution, including systems, platforms and technology required to deliver the functional and non-functional requirements. The document will (where required) expand on the High-Level Design and Release 1 and should contain the following: Introduction: a. document overview; a. document inputs; and b. phase scope. Systems architecture: c. high level conceptual overview; d. level 2 business processes; e. application usage view; f. system integration view; g. application structure view; h. information architecture (including reference data requirements); i. infrastructure usage view; j. implementation and deployment view; and k. manual integration. Rationale and justification for detailed design architectural approach: l. rationale; m. architecture risks; n. architecture issues; o. architecture constraints; p. architecture assumptions; q. architecture decisions; and architecture dependencies. The Release 1 Non-Functional Design developed during the Detailed Design (Release 1) Phase must be incorporated into the Release 1-T2 Architecture Specification and updated to reflect the findings by the Contractor during the Detailed Design (Release 1-T2) Phase. The Release 1-T2 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability; e. manageability; f. performance; g. portability; h. reliability; i. reporting;	

#	Deliverable	Description	Approval
		j. scalability; k. security; and l. usability.	
3	Release 1-T2 Integration Specification	The Release 1-T2 Integration Specification describes the high level integration points between the IMS and other systems in the Customer Environment. A detailed interface specification for each Interface will be created by the Systems Integrator during the Build Phase for Release 1-T2. The following subjects are included in the Release 1-T2 Integration Specification, one entry for each integration service: a. high level data flows between applications to support the business processes; b. data objects required by consumer – request; c. data objects available from consumer – response; and d. data object transformations required. The Release 1-T2 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each Interface to be created by the Systems Integrator during the Build Phase for Release 1-T2 will describe the relevant Acceptance Criteria for each Interface.	The Customer (or its nominee)
4	Project Communication Plan for Release 1-T2	Contribute to the development of the Project Communications Plan for Release 1-T2 being developed by the Systems Integrator. The Project Communications Plan for Release 1-T2 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1-T2 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)
5	Updated Technology Implementation Strategy (Release 1-T2)	Contribute to the development of the Updated Technology Implementation Strategy being developed by the Systems Integrator. The Updated Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in Release 1 and as varied to reflect the Release 1-T2 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the System, including, at a minimum: a. personnel and organisation;	The Customer (or its nominee)

#	Deliverable	Description	Approval
		b. implementation approach, including: i. releases; ii. system Verification and Validation; iii. system change management; iv. release and deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for Go Live; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. Verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function.	
6	Technology Test Strategy (Release 1-T2)	Contribute to the development of the Updated Technology Test Strategy being developed by the Systems Integrator. The Technology Test Strategy refers to the program test framework and must include the following: a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability; assumptions; test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; Defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document revision and history; and i. Approvals.	The Customer (or its nominee)
7	Updated Project Management Plan (Release 1-T2)	Contribute to the development of the Updated Project Management Plan being developed by the Systems Integrator. The Project Management Plan submitted by the Contractor during Release 1 shall be used as the base document and will be updated to reflect the	The Customer (or its nominee)

#	Deliverable	Description	Approval
		findings by the Contractor during the Detailed Design (Release 1-T2) Phase. The Updated Project Management Plan must specify, as a minimum, the following: a. current project status; b. project overview; c. scope and deliverables; d. solution approach, including: i. architecture and phase approach; ii. organisation change management; and iii. delivery approach; e. budget and schedule; f. dependencies; g. roles and responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 19.4 of this PIPP; and k. key risks and issues.	
8	RACI (Release 1-T2)	Contribute to the RACI Deliverable being developed by the Systems Integrator. The RACI must detail the deliverables and respective obligations of the Systems Integrator, the Contractor, Key Contractors and the Customer.	The Customer (or its nominee)
9	Updated Release 1-T2 Product Gap Analysis	The Updated Release 1-T2 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Key Contractors (as applicable) during the Detailed Design (Release 1-T2) Phase. The Updated Release 1-T2 Product Gap Analysis Deliverable specifies the gaps between Release 1-T2 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)
10	Release 1-T2 Master Test Plan	Contribute to the Release 1-T2 Master Test Plan being developed by the Systems Integrator. The Release 1-T2 Master Test Plan describes how the testing will be delivered for the Release 1-T2 System Test phase and must include: a. test plan identifier; b. references; c. introduction; d. test objectives; e. test items;	The Customer (or its nominee)

#	Deliverable	Description	Approval
		f. software risk issues; g. features to be tested and traceability; h. features not to be tested and reasons; i. approach including the use of stubs, simulators etc; j. item pass/fail criteria (if different from strategy); k. suspension criteria and resumption requirements (if different from strategy); l. test deliverables; m. environmental needs; n. staffing and training needs (if different from strategy); o. responsibilities; p. schedule of tasks and assigned staff; q. planning risks and contingencies; r. approvals; and s. glossary.	
11	Requirements Traceability Matrix updated for Release 1-T2	Contribute to the Requirements Traceability Matrix Deliverable for Release 1-T2 being developed by the Systems Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1-T2 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other Deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)
12	Technology Environment Management Strategy	Contribute to the update of the Technology Environment Management Strategy Deliverable being developed by the Systems Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. booking and reserving test systems; b. tracking environment changes; c. managing environment contention; d. code/defect management (code promotion processes); e. environment scheduling; f. configuration tracking; g. data management (extracts, transforms loads); and h. managing interdependent projects.	The Customer (or its nominee)

#	Deliverable	Description	Approval
Transformation and Change Deliverables			
13	Change Impact Analysis (Release 1-T2)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1-T2 related activities in the following dimensions: a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes within the ROC.	The Customer (or its nominee)
14	Release 1-T2 Training Needs Analysis	Contribute to the development of the Release 1-T2 Training Needs Analysis being developed by the Systems Integrator. The Release 1-T2 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1-T2 solution. The Release 1-T2 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during later phases of Release 1-T2, as set out in section 18.	The Customer (or its nominee)

13.5 Exit Criteria

13.5.1 The Exit Criteria for Detailed Design (Release 1-T2) Phase are:

#	Criterion	Description
1	Completion of all Detailed Design Deliverables	The Customer has accepted the Detailed Design Deliverables set out in section 13.4 of this PIPP.

14 Build Phase (Release 1-T2)

14.1 Overview

14.1.1 The purpose of the Build Phase (Release 1-T2) is to:

a) configure and customise the Licensed Software to fulfil the requirements specified in the Updated Requirements specified in Appendix A;

b) provide alpha and beta versions of the Licensed Software to the Customer to enable early visibility of the functionality of the Licensed Software; and

c) in collaboration with the Systems Integrator, customise the Licensed Software to interface with the TIBCO middleware and other Customer systems as detailed in the SAD.

14.1.2 The Contractor must ensure that:

a) all of the Services and Deliverables that it is obliged to supply under the Build Phase (Release 1-T2) are supplied and completed;

b) it will work collaboratively with the Systems Integrator to deliver the Services and Deliverables; and

c) all Deliverables that it is obliged to supply under the Build Phase (Release 1-T2) are Approved by the Customer, on or before the relevant date(s) specified in the Project Schedule.

14.2 Entry Criteria

14.2.1 The Entry Criteria for the Build Phase (Release 1-T2) are specified in the table below:

#	Criterion	Description
1	Software Build Documents are in final form	The Software Build Documents are in final form and have been approved, or are awaiting approval, by the Customer. Where one or more of the Software Build Documents have not been approved by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.
2	Detailed Design (Release 1-T2) Phase completed to necessary level to finalise the Software Build Documents and start the Build Phase (Release 1-T2)	All Services that the Contractor is required to supply during the Detailed Design (Release 1-T2) Phase to deliver the Software Build Documents have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1-T2) Phase to enable the finalisation of the Software Build Documents and commencement of the Build Phase (Release 1-T2).

14.3 Services

14.3.1 Subject to section 14.2, the Contractor must supply the following Services for the Build Phase (Release 1-T2):

#	Description
1	**Licensed Software (REM 2017.R2)** The Contractor shall Customise the Contractor's standard Licensed Software as detailed in the Software Build Documents in Annexure A to: (a) develop REM 2017.R2; and (b) address the Release 1-T2 Mobility requirements documented in the Software Build Documents
2	**System Testing** The Contractor will perform testing of the REM products at their development site and in accordance with the Contractor's existing in house processes. The Contractor shall provide the TSR to demonstrate, to the Customer's satisfaction, that the Licensed Software has been subjected to an appropriate level of testing to ensure it is fit for purpose.
3	**TIBCO Interfaces** As required, the Contractor shall support the Systems Integrator, including provision of technical advice and assistance to enable the Systems Integrator to develop the interfaces for TIBCO.
4	**REM Installation** The Contractor shall install the Licensed Software in the relevant Customer non-production environment to enable the Parties to enter SAT.
5	**Data Configuration – System** The Contractor shall support the Systems Integrator as required to undertake configuration of the data as required by the Customer to enable the Testing Phase to commence.

14.4 Build Deliverables

14.4.1 The Contractor must, in collaboration with the Systems Integrator, supply the following Deliverables as part of the Build Phase.

14.4.2 Those Deliverables that were previously provided by the Contractor for Release 1 shall be updated, if required, during the Build Phase to reflect, alternative approaches to the build, or delivery of the Services, or technological issues not contemplated during the High Level Solution Design Phase and/or Detailed Design (Release 1) Phase and/or the Detailed Design (Release 1-T2) Phase.

14.4.3 The Contractor must supply, or provide input into the following Deliverables as set out in the RACI. The Contractor shall provide all reasonable input and feedback to the Systems Integrator to ensure the Deliverables are fit for purpose.

#	Deliverable	Description
1	Architecture Specification	The updated Architecture Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
2	Functional Specification	The updated Release 1-T2 Functional Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).

#	Deliverable	Description
3	Integration Specification	The updated Integration Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
4	Test Strategy	The updated Test Strategy will reflect the approach agreed between the Customer, Contractor and Systems Integrator to implement IMS for Release 1-T2.
5	Master Test Plan	The updated Master Test Plan will reflect the approach agreed between the Customer, Contractor and Systems Integrator to test REM for Release 1-T2.
6	Project Management Plan	The updated Project Management Plan will reflect lessons learnt during Release 1-T2, as well as revision in the approach to project management agreed between the Parties during the Build Phase (Release 1-T2).
7	RACI	The updated RACI shall reflect additional Services and Deliverables identified for Release 1-T2.
8	Technology Environment Management Strategy	The updated Technology Environment Management Strategy will reflect the lessons learnt during Release 1 and Release 1-T2, as well as revision in the approach to environment management agreed between the Parties during the Build Phase (Release 1-T2).
9	Technology Communications Plan	The updated Technology Communications Plan will reflect lessons learnt during Release 1-T2, as well as revision in the approach to project communications agreed between the Parties during the Build Phase (Release 1-T2).
10	Product Gap Analysis	The updated Product Gap Analysis will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
11	Interface specification	The updated Interface Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
12	Requirements Traceability Matrix	The updated Requirements Traceability Matrix will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
13	Technology Implementation Plan	The Contractor will contribute to the development of the Technology Implementation Plan being developed by the Systems Integrator. The Contractor shall base its response on the Technology Implementation Template agreed between the Parties during Detailed Design. The Technology Implementation Plan will detail and schedule the activities to deploy REM 2017.R2 into the Customer Environment. It must additionally address training, development of, and installation of the IMS into the Customer Environment, as well as handover to the Customer from the Contractor, Go Live and roll back (from the technology perspective).

#	Deliverable	Description
14	Interface Documentation for SIRI (REM 2017.R2)	If required as a result of the changes that occur for REM 2017.R2, the Contractor will update the REM SIRI SX Interface Documentation that includes: a. detailed mapping documentation of REM Data Model to SIRI SX Data Model; b. XML Schema Definition (XSD) for REM Incident SIRI extension; c. architecture overview / data flow diagram; d. description of configuration options for SIRI SX REM Server module; e. description of configuration options for REM DMC; and f. SIRI SX message samples. The Contractor will collaborate with the Systems Integrator to ensure the Systems Integrator interface documentation aligns with the interface documentation developed by the Contractor.
15	Interface Documentation for Notification Functionality (REM 2017.R2)	The Contractor will update the Interface Documentation for Notification Functionality that shall include: a. restful interface specification comprising: i. URL scheme and parameter specification; ii. specification of authentication mechanism; and iii. interface versioning specification; b. XML Schema Definition (XSD) for service request/response messages; c. HTTP code specification for request/response messages; and d. request/response messages samples.
16	Documentation of the REM Data Model (REM 2017.R2)	The Contractor will update the Documentation of the REM Data Model that shall include: a. ERD; b. Detailed entity documentation (column names, data types); c. Common attributes for: i. all data types (e.g. deactivated by, deactivated_ts, optlocking); ii. versionised REM Master Data (e.g. version_id, valid_from, valid_to); iii. imported REM Master Data (e.g. valid_from, valid_from, valid_to); and iv. data versioning principles
17	User Manual for Emergency Management Client (EMC) (REM 2017.R2)	The Contractor shall update the User Manual for Emergency Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the EMC. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.

#	Deliverable	Description
18	User Manual for Data Management Client (DMC) (REM 2017.R2)	The Contractor shall update the User Manual for Data Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the DMC. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.
19	User Manual for Web Portal (REM 2017.R2)	The Contractor shall update the User Manual for Web Portal that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the Web Portal. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.
20	User Manual for REM Mobile (REM Mobile 2017.R2)	The Contractor shall update the User Manual for REM Mobile 2017.2 that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the mobile application. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.
21	IMS (REM 2017.R2) Licensed Software	Installation files, database update scripts and documentation for the deployment of REM 2017.R2.
22	System Test Summary Report (2017.R2)	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results in general composition contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; and iii. deviations from the plan; iv. Defect summary.

14.5 Exit Criteria

#	Criterion	Description
1	Environment	For each environment type (as described in the TEMS and Environment Specification), the Customer has provisioned and set up the necessary environment to enable the relevant tests to commence.
2	Licensed Software	The Contractor has delivered the Licensed Software to the Customer accompanied by the Systems Test Summary Report.
3	REM installation	The Contractor has installed the Licensed Software in the relevant non production environments for SAT.

#	Criterion	Description
4	Testing Criteria	The Parties have developed the testing plans and criteria relevant for the testing phase.
5	Acceptance of Deliverables	The Customer has accepted the Deliverables relevant for the Build Phase and, to the extent that it is responsible, the Data Phase.
6	Configuration	The Licensed Software has been configured to the extent required by the Customer to enable the Parties to enter SAT.
7	Database	The Systems Integrator has populated the Database with sufficient data to enable testing to commence.

15 Data Phase (Release 1-Tranche 2)

15.1 Overview

15.1.1 The following Data Management services are a subset of the Build Phase (Release 1-T2):

a) Data Management as set out in section 15.3.1; and

b) Data Configuration as set out in section 15.3.3.

15.1.2 The Services described below are predominately performed by the Systems Integrator, in conjunction with the Customer. However, the Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are supplied and are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

15.2 Entry Criteria

15.2.1 The Entry Criteria for the Data Phase (Release 1-T2) are specified in the table below:

#	Criterion	Description
1	Data Profiling	a. The Customer has established the data profiling team consisting of Customer and Systems Integrator personnel to identify sources of data within the Customer Environment to enable IMS to achieve its Functional Requirements (**Data Profiling Team**); and b. To the extent practicable, the Customer's data repositories have been identified and access granted to the Data Profiling Team.
2	Configuration Requirements	a. The Customer has compiled the necessary data to enable the Contractor and Systems Integrator to commence the configuration.

15.3 Services

15.3.1 Data Management Services

#	Service	Description
1	Data Cleansing and Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to perform Data Cleansing as set out in Module 9. For the avoidance of doubt, the majority of the Data Cleansing work will be performed by the Systems Integrator and Customer and the Contractor will

#	Service	Description
		perform a supporting role.

15.3.2 **Data Configuration of REM Services**

#	Service	Description
1	Initial Data Load and Configuration	The Contractor shall provide technical advice to enable the Systems Integrator to undertake the Initial Data Load and Configuration of the Data. The Systems Integrator's scope for the Service extends to importing Customer supplied data into a clean REM system environment: a. clarification of data structure specified in the XLS template; b. dry-run of the provided master data XLS template on the relevant development system; c. single import of the XLS template to a database on the Customer Environment (Clean Environment); and d. initial Configuration using loaded data. The Contractor's assistance will be limited to providing: (i) technical input as well as providing hands-on training as required to the nominated Systems Integrator resource; and (ii) support of one data load.
2	Configuration Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator with the loading of additional data and modifications and additions to the configured data.

15.4 Exit Criteria

15.4.1 Exit Criteria is as detailed in point 5, 6 and 7 of the Build Phase (Release 1-T2) Exit Criteria set out in section 14.5 above.

16 Testing Phase (Release 1-T2)

16.1 Overview

16.1.1 The purpose of the Testing Phase (Release 1-T2) is to ensure the Licensed Software satisfies the Customer's Requirements, as well as interoperates with the TIBCO middleware and the Customer Environment.

16.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Testing Phase (Release 1-T2) are supplied and completed;

b) testing performed by the Contractor in the Systems Test environments are documented as being fit for purpose when the Licensed Software is delivered to the Customer;

c) the Contractor demonstrates that the Licensed Software has been successfully tested in the Customer's relevant environment for SAT;

d) it provides appropriately skilled resources to assist the Systems Integrator and Customer during all other Tests contemplated in this Section 16; and

e) all Deliverables that it is obliged to supply under the Testing Phase (Release 1-T2) are accepted by the Customer, on or before the relevant date(s) specified in the Project Plan.

16.2 Entry Criteria

16.2.1 The Entry Criteria for the Testing Phase (Release 1-T2) is specified in the table below.

#	Criterion	Description
1	Licensed Software is ready for SAT	a. The relevant test environment (as described in the TEMS as set out in Schedule 2 of this Customer Contract (Agreement Documents)) has been set up and is available to commence testing; b. Verification by the Contractor that the Licensed Software has been installed in the Customer's non-production environment; c. System testing of the Licensed Software has successfully met its exit criteria as demonstrated by the System Test Summary Report; d. Test Data has been imported in to the relevant test environment(s) by the Systems Integrator for either the preferred option or alternative option described below, as determined by the Customer: i. The preferred option is that: A. relevant Customer Master Data has been supplied and loaded into the test environment; and B. the Master Data has been configured by the Configuration Team in line with the Customer's business processes; ii. The alternative option is that: A. sample Master Data has been provided by the Contractor as agreed between the Parties; and B. sample business configuration has been provided by the Contractor; e. SAT Test Plan has been accepted by the Customer.

16.3 Services

16.3.1 The following Services will be performed by the Contractor either in a lead capacity, as a contributor to Services performed by the Systems Integrator, or in consultation with the Systems Integrator, Key Contractors or any Interfacing Contractor.

#	Service	Description
1	SAT Test Phase, REM Licensed Software	The Contractor will perform SAT testing of the Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 16.4 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.

#	Service	Description
2	Test Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator provide technical assistance and advice, to support the Systems Integrator and Customer to deliver the following tests. This applies to all test phases including Cross Stream and Security testing: a. SIT Test Phase; b. UAT Test Phase (Program and Business); c. Load and Performance Test Phase; d. Operational Acceptance Testing Test Phase; e. ERM Regression Testing; f. Security and Penetration Testing; and g. Cross Stream Testing. Test support by the Contractor is limited to Defect triage, Defect rectification, progression and regression testing of fixes affecting the Licensed Software.

16.4 SAT Deliverables

16.4.1 The Contractor shall deliver the following Deliverables.

#	Deliverable	Description
1	SAT Test Objective Matrix (2017.R2)	A table demonstrating proposed test coverage. Test objectives state what is to be tested and are derived from the requirements and depend on the scope of the test phase.
2	SAT Test Cases (2017.R2)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.
3	SAT Test Summary Report (2017.R2)	The SAT Test Summary Report provides a summary and evaluation of the test phase based on objective data and a recommendation to move to the next stage of testing or to execute further tests in the current test phase based on results of the SAT Test. In general the SAT Test Summary Report contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; d. Recommendations to move to the next stage or to execute further tests based on results.
4	System Test Plan	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to prepare the System Test Plan. The System Test Plan is an outcome of the planning process. It ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the solution will support the Customer's business and stakeholder requirements.

16.5 Other Test Deliverables

16.5.1 The following are Deliverables to be developed by the Systems Integrator or Customer that may require assistance and input from the Contractor. The expectation is that the Contractor's input into these deliverables will be minimal.

16.5.2 One set of Deliverables will be created for each of the following Test Phases:

a) System Testing for TIBCO and other interfaces;

b) SIT Test;

c) Load and Performance Testing;

d) User Acceptance Testing;

e) Operational Acceptance Testing;

f) Security and Penetration Testing; and

g) Cross Stream Testing.

#	Deliverable	Description
1	Test Plan	The Test Plan ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the Licensed Software will support the Customer's business and stakeholder requirements.
2	Test Objective Matrix (TOM)	The TOM is a table demonstrating proposed test coverage. Test Objectives state what is to be tested and are derived from the business and functional requirements and depend on the scope of the test phase.
3	Test Cases	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the test cases is to state how the testing will be implemented during testing and are based on the TOM.
4	Test Summary Report	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results In general the Test Summary Report must contain, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; and iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; Recommendations to move to the next stage or to execute further tests based on results.

16.6 Defect Severity Definitions

16.6.1 The following Defect severity definitions shall apply for all Test Phases, excluding Systems Testing.

Severity 1

Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists.

Examples of Severity 1 Defects include:

a) safety issues; or

b) REM or a core component of REM is inoperable.

The Customer will not take Severity 1 Defects into the next Test Phase or to the Production Environment.

Severity 2

High Impact – Assigned to major errors. Some key REM functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality, but the Defect must be resolved before the component can be migrated to the next Test Phase or to Production Environment.

Examples of severity 2 Defects include:

a) the REM or a component of REM is operable however one or more functions do not work according to the Functional Specifications or have not been delivered and no acceptable workarounds exist;

b) any issue with data accuracy or integrity which may cause confusion among the Customer end-user community.

The Customer would not usually consider taking Severity 2 Defects into the next test phase or to the Production Environment unless there were exceptional circumstances. The Customer would need to have understood and accepted the risk/impact via approval of the TSR. There is an expectation that any Severity 2 Defects would be resolved by the next release of the Licensed Software.

Severity 3

Medium Impact – Assigned to minor errors. Some functionality does not conform to the Functional Specifications or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact on the Customer's end users. Testing can continue and the component can be migrated to the next test phase or to the Production Environment providing exit criteria are met.

Examples of Severity 3 Defects include REM or an REM component is operable however one or more functions do not work according to their Functional Specifications or have not been delivered and acceptable workarounds exist.

The Customer may consider (at its sole discretion) taking a small number of Severity 3 Defects into the next test phase or the Production Environment provided the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the System. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

Severity 4

Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on the Customer end users or the System. Examples of Severity 4 Defects include:

a) misspelled (but not misleading) text;

b) inconsistent fonts; or

c) poor grammar.

The Customer may consider (at its sole discretion) taking a small number of Severity 4 Defects into the next test phase or the Production Environment providing the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the ROC Program. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

16.7 Defect Priority

16.7.1 Each Defect is also assigned a priority level which indicates to development team(s) the order in which defects of the same severity should be addressed. Priorities which can be assigned to defects within the ROC Program are:

a) 1 – High;

b) 2 – Medium; or

c) 3 – Low.

Assuming open Defects of every severity and priority combination, the order in which Defects should be addressed is outlined in the table below:

Order	Severity	Priority
1	Severity – 1	Priority – High
2	Severity – 1	Priority – Medium
3	Severity – 1	Priority – Low
4	Severity – 2	Priority – High
5	Severity – 2	Priority – Medium
6	Severity – 2	Priority – Low
7	Severity – 3	Priority – High
8	Severity – 3	Priority – Medium
9	Severity – 3	Priority – Low
10	Severity – 4	Priority – High
11	Severity – 4	Priority – Medium
12	Severity – 4	Priority – Low

16.8 SAT Exit Criteria:

#	Deliverable	Description
1	Test Cases	All test cases have been executed and the outcome recorded in the Contractor's Test Management Tool (**TMT**). An explanation has been provided by the Contractor to the Customer for any test case which has not been executed by the Contractor. The Parties acknowledge and agree the TMT used by the Contractor will be Jama, as compared to HP ALM used by the Systems Integrator and Customer.

#	Deliverable	Description
2	Recording Defects	All Defects identified during the test phase have been recorded in the Defect Management Tool (DMT) and are available for review. The Parties acknowledge and agree the DMT used by the Contractor will be ITSM, as compared to HP ALM used by the Systems Integrator and Customer.
3	Severity 1 / Severity 2 Defects	No Severity 1 or Severity 2 Defects outstanding.
4	Severity 3 / Severity 4 Defects	An agreed action plan is in place to address outstanding Severity 3 and Severity 4 Defects, including target resolution time frame.
5	Defect Acceptance	The number of outstanding Severity 3 and Severity 4 Defects and the cumulative impact of these Defects on REM must be accepted by the Customer. Once all test exit criteria for the test phase have been met, the Contractor must produce a TSR to demonstrate the outcome of the testing phase. Where exit criteria have not been met, the test phase shall continue until exit criteria has been met.
6	Defect Deviation	Any deviation from the agreed exit criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management.

17 Deployment (Release 1-T2) Phase

17.1 Overview

17.1.1 The Objectives for these Services are that:

a) the Licensed Software is deployed into the relevant test or Production Environment;

b) deployments into the Customer relevant environments are managed so that any disruption to the environments that can be avoided is avoided, or where avoidance is not possible, kept to a minimum;

c) deployments are managed in accordance with the Customer's Enterprise Release Framework and Change Management process.

This section encompasses the Services required to confirm the readiness of REM 2017.R2 for deployment into the relevant test or Production Environment.

17.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are accepted by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

17.2 Entry Criteria

17.2.1 The Entry Criteria for the Deployment (Release 1-T2) Phase are specified in the table below:

#	Criterion	Description
1	Licensed Software	The Licensed Software has been received by the Customer from the Contractor.

#	Criterion	Description
2	Documentation	The Contractor has provided details of the software and hardware configurations required to enable the Licensed Software to be tested in the relevant environments (as described in the TEMS and the Release 1-T2 Architecture Specification).
3	Environments	The Customer has set up the following environments in accordance with the Release 1-T2 Architecture Specification and as described in the TEMS: a. REM Configuration; b. REM Demo; c. Development; d. System Test; e. SIT; f. UAT; g. Pre-PROD; h. PROD; i. Training; and j. Disaster Recovery*. * Out of scope for the Contractor's Services (the **Non Production Environment**).

17.3 Services

17.3.1 The Contractor will provide a Systems Administrator to provide the following Services for each Customer Non Production Environment, Pre-Production Environment and Production Environment. Unless otherwise agreed between the Parties, the Systems Administrator's role concludes on 30 April 2018.

17.3.2 The Systems Administrator will perform the Services described in the table below:

#	Service	Description
1	Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment: a. REM Incident Management software; and b. additional necessary software packages.
2	System Level Configuration	Configure REM application on system level - various configuration and start up files.
3	Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. as preparation for the production environment; and c. for debugging and Defect reproducing reasons.
4	Schema Updates	Perform Database Schema Updates, as required.
5	Monitoring Tools	Installation and configuration of monitoring tools according to Customer standards.
6	Manage Users	Setup, manage and track users and associated access levels.

#	Service	Description
7	Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations. For clarity, if the Customer requires any further assistance from the Contractor in respect of any third party voice communications system (VCS) product over and above integration issues on the Contractor side of the standard interface of REM 2017.R2, this assistance will be negotiated by the Customer and the Contractor and outlined in a Change Request.
8	Sanity Testing	Perform basic sanity testing of the integration and configuration.
9	Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.
10	Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. creation of Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality); and vi. filing an error report in the Contractor's Defect Reporting Tool ITSM.
11	Production Support	The Contractor will provide support after REM Goes Live in the Production Environment on request from the Systems Integrator or the Customer. Unless otherwise agreed, post-production support will be priced on the T&M Rates in the PIPP.

17.4 Responsibilities

17.4.1 The Customer will:

a) establish and disseminate to the Contractor and Systems Integrator, an ERM framework to permit seamless deployment;

b) provide timely notification to the Customer's ERM team to schedule the REM deployment in accordance with the ERM framework;

c) set up and maintain operational test environments that are functionally equivalent to the Production Environment where the Systems Integrator or Contractor needs such operational test environments to fix Defects and perform regression testing:

d) log all requests for support in accordance with 17.3.1 in ITSM. For clarity, this does not prevent Customer Personnel from discussing matters or issues directy with the Systems Administrator.

17.5 Deliverables

17.5.1 The Contractor shall provide, or contribute to the following Deliverables developed by the Systems Integrator.

#	Deliverable	Description
1	Handover Plan	The Hand Over Plan is a Systems Integrator Deliverable outlining: Technical documents required to support REM that includes as built specifications documents etc; Training Session(s) to be provided by the Contractor and/or Systems Integrator (as required) to enable proficiency in the use of REM, as well as basic support, including: A. number of students; B. duration of course; C. outline of content; and D. key dates. **Note**: The Handover Plan relates to REM only and excludes the Customer Environment.
2	Post Implementation Verification Report	The Contractor shall, in conjunction with the Systems Integrator, provide any required assistance to the Customer to develop the Post Implementation Verification Report which outlines: a. the issues that arose during the Deployment (Release 1-T2) Phase that necessitate recording; b. lessons learned from the Deployment (Release 1-T2) Phase that may be used to mitigate further problems or repeated to ensure seamless delivery of services; and c. follow-up actions including detailing any deferred scope.
3	Production and Pre-Production Installation Run-Sheets	REM Pre-Prod and Prod installation Run Sheets based on ROC Technology Implementation Plan template.

18 Training – Release 1 – T2

18.1 Overview

18.1.1 The Contractor shall provide the following training to enable the Customer to use, operate, administer and maintain REM.

18.2 Services

18.2.1 The Contractor shall deliver the following Training Services to the Customer.

Item	Service	Description
1	Operator "Train the Trainer" Training	Provision of operator "Train the Trainer" Training This training is intended for staff responsible for training the Customer staff required to operate REM. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functional and operational principle of an incident management system; b. explain the functionality of REM; c. explain the typical use cases and associated workflows; d. perform operative incident management using REM at an operator place independently; e. have an overview of the system actors, support structure and supplementary application documentation; and f. explain, teach and demonstrate the REM operational content in the Customer's learning environment. This Service includes: a. design of "Train the Trainer" training course to meet the aims outlined above; b. provision of all training materials; and c. provision of a single "Train the Trainer" a single training course to the Customer Personnel (3 continuous days in length). The Customer will provide the training facilities required to conduct the courses.

Item	Service	Description
2	System Administration training	Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of REM. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. The aim of the course is to provide attendees with training to enable the attendees to: a. identify components of REM 2017.R2 and assign them to system structures; b. explain the functionality and purpose of the individual components of REM 2017.R2, including system interfaces; c. interpret operational and technical messages of REM 2017.R2 and analyse causes; d. carry out maintenance working steps for administration of REM 2017.R2 components according to the system administration manual; e. carry out software update procedures for REM 2017.R2; f. name, readout and interpret relevant log files of REM 2017.R2; g. assess the technical and operational effects of these actions; and h. provide second level support requirements.
3	Application Administration Training	The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of REM. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functionality of REM b. explain the functionality of the REM DMC; c. explain the functional data structure of REM; d. maintain REM configuration data; e. configure the responsibility model; f. configure the track network; g. configure workflows; and h. carry out user, role and group administration.

18.3 Deliverables

18.3.1 The Contractor shall provide the following Deliverables for the training courses it will deliver to the Customer:

#	Deliverable	Description
1	Training Material Operator Train the Trainer Training	Update REM Operator Train the Trainer Training consisting of trainer PowerPoint slide pack in consultation with the Customer and the System Integrator. This Deliverable is provided in the Contractor's standard format.

#	Deliverable	Description
2	Training Material System Administration	Contractor is responsible for updating the training material for System Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual. This Deliverable is provided in the Contractor's standard format.
3	Training Material Application Administration	Contractor is responsible for updating the training material for Application Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual. This Deliverable is provided in the Contractor's standard format.

Section D – Common Terms

19 Acceptance, Change Request and Assumptions

19.1 Acceptance

19.1.1 The Contractor must:

a) in collaboration with the Customer and Key Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Key Contractors (as required) to ensure that all Deliverables are fit for purpose and meet the agreed Acceptance Criteria.

19.1.2 The Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Build Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

19.1.3 Deliverables will be reviewed by the System Integrator acting as the Customer's nominee. Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with the Additional Conditions, the System Integrator will request the Customer's endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

19.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

a) Milestone Acceptance Forms must be signed in writing by the Contractor's Project Director and Customer's Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customer's delegate; notification by email of the endorsement is sufficient.

d) Contractor's Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) The Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

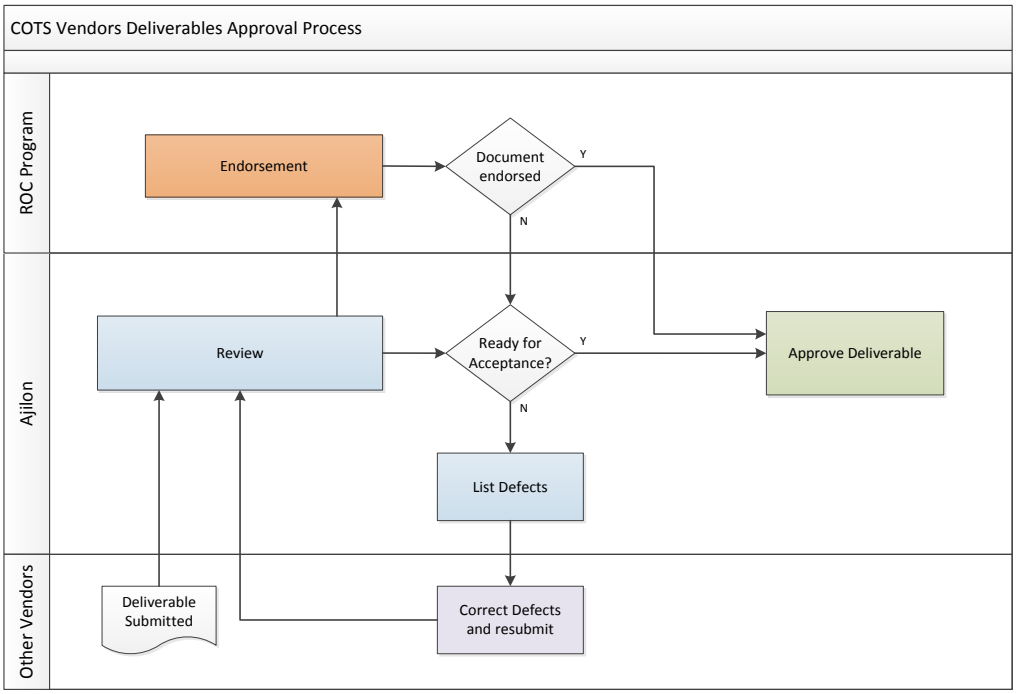
h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of Defects (tracked in a spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



19.1.5 The Contractor must supply the Deliverables which are part of the Customer Contract in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

19.1.6 The Contractor must ensure that the System described in the Detailed Design:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

19.1.7 Subject to section 19.1.6, the Customer (or its nominee) must review a Deliverable submitted during the Customer Contract in accordance with the Additional Conditions.

19.1.8 The Contractor agrees that any review, comment, approval, endorsement or election or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect the Services or Deliverables under this Customer Contract, including in respect of the Detailed Design;

b) does not limit or affect the provision of the Contractor's warranties or indemnities;

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

19.2 Change Request

19.2.1 If:

a) during the term of the Customer Contract, the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Requirements (**Variation**); and

b) that Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

19.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 19.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits a Deliverable,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Variation.

19.3 Not used

19.4 Summary Table of Deliverables and expected delivery dates

19.4.1 **Release 1 [Release 1 – T2 list of Deliverables to be aligned]**

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Phase and documented in the associated draft Project Schedule)

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Detailed Design				

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 2	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 3	Release 1 Functional Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 4	Release 1 Non-Functional Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 5	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 6	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 7	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 8	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 9	Updated Implementation Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 10	Release 1 Implementation Plan (draft)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 11	Technology Test Strategy	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 12	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 13	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 14	Updated Release 1 Product Gap Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 15	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 16	Requirements Traceability Matrix for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 17	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 18	Operating Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 19	Draft recommended ROC organisation structure	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 20	Change Impact Analysis (Release 1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 21	Release 1 Training Needs Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1 Updated Detailed Design				
WBS 22	High Level Solution Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 23	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 25	Release 1 Non-Functional Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 26	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 27	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 28	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 29	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 32	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 33	RACI	Document	As specified in	15 Business Days after delivery of the

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			the draft Project Schedule	Deliverables as specified in the Project Schedule.
WBS 35	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 36	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1 New Deliverables				
WBS 37	Release 1 Technology Implementation Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 38	Interface Documentation for SIRI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 39	Shadow Data Base Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 40	Interface Documentation for Notification Functionality (REM)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 41	Documentation of the REM Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 42	User Manual for Emergency Management Client (EMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 43	User Manual for Data Management Client (DMC)	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 44	User Manual for Web Portal	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 45	User Manual for REM Mobile 2016.R1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 46	IMS (REM 2016.R1) Licensed Software	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 47	Licensed Software (REM Mobile 2016.R1)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
REM Mobile Non-Production Deployment				
WBS 51	REM Mobile Software Update (QR Code deployment)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 52	REM Mobile Configuration Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 53	REM Mobile Deployment Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 54	REM Mobile Hand-over to Support Documentation (handover of non-production processes & procedures)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 55	Update of REM Mobile Functional Specification (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 56	Update of REM Mobile Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 57	Update of REM Mobile User Manual (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58	Update of Requirements Traceability Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
REM & REM Mobile 2016.R2				
WBS 58A	REM System/Software Delivery (REM Release 2016.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 58B	REM System/Software Delivery (REM Mobile 2016.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 58C	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58D	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58E	Update of Interface Documentation for SIRI (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 58F	Interface Documentation for Notification Functionality (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58G	Update Documentation of the REM 2016.2 Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58H	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58I	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58J	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58K	Update Requirements Traceability Matrix for REM 2016.R2	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58L	Test Summary Report for System Test (REM Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58M	Test Summary Report for System Test (REM Mobile 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SAT Testing Deliverables				
WBS 66	SAT Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 67	SAT Test Cases (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 68	SAT Test Summary Report (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 69	SAT Test Objective Matrix (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 70	SAT Test Cases (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 71	SAT Test Summary Report (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
System Testing for TIBCO and Other Interfaces				
WBS 72	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 73	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 74	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 75	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
SIT				
WBS 76	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 77	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 78	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 79	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Load and Performance Testing				
WBS 80	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 81	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 82	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 83	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
User Acceptance Testing				
WBS 84	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 85	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 86	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 87	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Deployment Deliverables				
WBS 88	Hand Over Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Training				
WBS 89	Train the Trainer Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 90	System Administration Train Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 91	Application Administration Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

19.4.2 **Release 1-Tranche 2**

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Detailed Design				
WBS 92	Release 1 Architecture Specification	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 93	Release 1 Functional Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 95	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 96	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 97	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 98	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 99	Updated Implementation Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 100	Release 1 Implementation Plan (draft)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 101	Technology Test Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 102	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 103	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 104	Updated Release 1 Product Gap Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 105	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 106	Requirements Traceability Matrix for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 107	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 108	Operating Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 109	Draft recommended ROC organisation structure	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 110	Change Impact Analysis (Release 1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 111	Release 1 Training Needs Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Release 1 Updated Detailed Design				
WBS 112	High Level Solution Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 113	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 114	Release 1 Non-Functional Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 115	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 116	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 117	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 118	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 119	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 120	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 121	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 122	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1-T2 New Deliverables				
WBS 123	Release 1 Technology Implementation Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 124	Interface Documentation for SIRI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 125	Shadow Data Base Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 126	Interface Documentation for Notification Functionality (REM)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 127	Documentation of the REM Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 128	User Manual for Emergency Management Client (EMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 129	User Manual for Data Management Client (DMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 130	User Manual for Web Portal	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 131	User Manual for REM Mobile 2016.R1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 132	IMS (REM 2016.R1) Licensed Software	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 133	Licensed Software (REM Mobile 2016.R1)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
REM Mobile Non-Production Deployment				
WBS 134	REM Mobile Software Update (QR Code deployment)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
135	REM Mobile Configuration Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 136	REM Mobile Deployment Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 137	REM Mobile Hand-over to Support Documentation (handover of non-production processes & procedures)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
138	Update of REM Mobile Functional Specification (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 139	Update of REM Mobile Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 140	Update of REM Mobile User Manual (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 141	Update of Requirements Traceability Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
REM & REM Mobile 2017.R2				
WBS 142	REM System/Software Delivery (REM Release 2017.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 143	REM System/Software Delivery (REM Mobile 2017.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 144	Update of Gap Analysis (REM and REM Mobile Release 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 145	Update of Functional Specification (REM and REM Mobile Release 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 146	Update of Interface Documentation for SIRI (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 147	Interface Documentation for Notification Functionality (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 148	Update Documentation of the REM 2017.2 Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 149	Update of User Manual for Emergency Management Client (EMC) (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 150	Update of User Manual for Data Management Client (DMC) (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 151	Update of User Manual for REM Mobile (REM Mobile 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 152	Update Requirements Traceability Matrix for REM 2017.R2	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 153	Test Summary Report for System Test (REM Release 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 154	Test Summary Report for System Test (REM Mobile 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SAT Testing Deliverables				
WBS 155	SAT Test Objective Matrix (2017.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 156	SAT Test Cases (2017.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 157	SAT Test Summary Report (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 158	SAT Test Objective Matrix (2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 159	SAT Test Cases (2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 160	SAT Test Summary Report (2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
System Testing for TIBCO and Other Interfaces				
WBS 161	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 162	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 163	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 164	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SIT				
WBS 165	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 166	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 167	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 168	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Load and Performance Testing				
WBS 169	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 170	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 171	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 172	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
User Acceptance Testing				
WBS 173	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 174	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 175	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 176	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Deployment Deliverables				
WBS 177	Hand Over Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Training				
WBS 178	Train the Trainer Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 179	System Administration Train Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 180	Application Administration Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

19.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

19.6 Exclusions

Not applicable.

20 Implementation

20.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the Parties.

20.2 Implementation strategy

20.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

20.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Technology Implementation Strategy which is included in Schedule 2 of the Customer Contract (Agreement Documents).

21 Project Management

21.1 Advice and knowledge transfer

The Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

21.2 Contractor assistance

If requested, the Contractor must participate in all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Requirements are accurate and complete; and

b) the Contractor's proposed solution.

21.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

21.4 Risk management

21.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes delivery risks,

(**Issues Register**).

21.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

21.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 21.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the delivery risks.

21.4.4 The Contractor must report to the Customer:

a) any issues or risks (including any delivery risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the delivery risks, immediately on becoming aware of that change in status.

21.5 Cooperation with Key Contractors

21.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Key Contractors in relation to the Project;

b) without assuming any liability for the contents of an Key Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Key Contractors;

c) comply with all other requests of the Key Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Key Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to a Key Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this Section by the Contractor is accurate and to the extent possible, complete.

21.6 Communication with Key Contractors

21.6.1 The Contractor must not, without the Customer's prior written consent:

a) give a Key Contractor a direction or instruction which will or is likely to vary the Key Contractor's scope in relation to the Project;

b) give a Key Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Key Contractor in relation to the Project;

c) give a Key Contractor a direction or instruction which will or is likely to delay the time that the Key Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Key Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Key Contractor in relation to the Services or the Deliverables.

21.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and a Key Contractor, or between Key Contractors, in connection with the Project.

21.7 Disputes between the Contractor and Key Contractors

21.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with a Key Contractor by discussion and negotiation without the Customer's involvement.

21.7.2 Where the Contractor has notified the Customer under section 21.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

21.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

21.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

21.8 Reliance on Key Contractors' work

The Customer does not warrant the accuracy or correctness of any reports, plans, drawings, documents or information provided by Key Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such reports, plans, drawings, documents or information.

21.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

21.10 Delivery Address

The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

22 Customer Supplied Items (CSI) and Customer obligations

22.1 CSIs and obligations

22.1.1 Subject to section 22.2, the Contractor acknowledges that the Customer has provided the following CSI items :

a) Customer's Enterprise Release Framework and Change Management process

b) project scope (as documented in the architecture blueprint);

c) functional requirements (as provided in the RFP);

d) non-functional requirements (as provided in the RFP);

e) draft Implementation & Maintenance Phase PIPP

f) system security requirements;

g) data management strategy;

h) project concept and review;

i) architecture blueprint;

j) systems impacted (existing);

k) interface specifications (where available);

l) technical policies and standards;

m) draft Procure IT (the Customer Contract and this PIPP);

n) ROC organization structure;

o) ROC Program high level roadmap;

p) draft ROC Program test management framework;

q) current processes;

r) concept of operations;

s) Transformation and Change Requirements v4.1;

t) ROC Systems Assurance and Planning Framework documents; and

u) ROC Data Architecture High-Level Strategy.

22.1.2 For Release 1 – Tranche 2, the Customer will provide the following CSI items:

a) Release 1-T2 Detailed Technology Business Requirements Specification (DTBRS);

b) Release 1 – T2 SAD; and

c) Telstra SMS Gateway Specification.

22.1.3 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

22.1.4 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 22.1.1 and 22.2.

22.1.5 Any Customer Supplied Items which are needed by the Contractor but are not identified above may be provided by the Customer at its discretion and in accordance with the Customer Contract

22.2 CSI Facilities and Equipment

22.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data;

c) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required data has to be provided in the agreed format and validated; and

d) all necessary IT to enable the Contractor to discharge its obligations on site.

22.3 CSI verification

22.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

22.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

22.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

22.4 Personnel

22.5 The Contractor must ensure that each member of the Contractor's Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

22.6 Any of the Contractor's Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

22.7 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

22.8 Nothing in Appendix B affects the scope of the obligations of either party as described in this PIPP.

22.9 Subcontractors

22.10 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

22.11 Approval by the Customer

22.12 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with section 13 of the Additional Conditions .

22.13 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

23 Payment Plan

23.1 Price Release 1

23.1.1 The Price for the Contractor to undertake Release 1 of the ROC Program is [redacted] (ex GST). This comprises:

a) Costs expended to date for a component of the Licensed Software, the Release 1 Detailed Design, as well as certain Build activities bought forward for Release 1. These were delivered under the Release 1 Detailed Design Contract and detailed in the Table 1 below; and

b) The remaining activities associated with the implementing the Licensed Software, as well as REM Support and detailed in Table 2 below

Table 1

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation and the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase	[redacted]		[redacted]
The Services and Deliverables specified in sections 5 of this PIPP.			
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase (Release 1) Phase until the end of November			
Travel Costs			
Customisation for ROC a. The majority of the customisation efforts can be deferred until 30 November 2015. b. Assumes that remaining customisation efforts will be ordered through the implementation contract until the deferred date.			
License component The REM IMS.			
Initial Implementation CR1			
Customisation for ROC - Interface customisation including GAP Features			
On/Off-Site Personnel Effort until 1 December 2015 to 29 February 2016			
Travel Budget			
Initial Implementation CR2 – REM Mobile and System Administration			
Licensed Software Note: The REM Mobile Software Licences , are only 40% of the full licence price for the respective module due to the reduced functionality required by the Customer for Release 1			
Customisation			
Documentation Deliverables			
System Administration			
Initial Implementation CR3 – 2016.R2 and REM Mobile 2016.R Deployment Support			
Customisation of Licensed Software (REM & REM Mobile 2016.R2)			
On/Off-Site Personnel Efforts for REM & REM Mobile 2016.R2 efforts.			
Services and Deliverables for QR code functionality to support testing			

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Sub-Total			[redacted]
GST			
Total			

23.1.2 The Contractor is to be paid for the items specified under 23.1.1 in accordance with the following milestones:

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Original Contract – Detailed Design Phase	[redacted]		[redacted]
1	Mobilisation payment of 50% (of [redacted] of the Project Preparation Phase and Detailed Design Phase on or about the Effective Date		1	
2	25% (of [redacted]) on 15th September 2015			
3	25% (of [redacted]) on 15th October 2015			
	Original Contract - Initial Implementation Phase			
4	Mobilisation payment of 50% (of [redacted] of the Initial Implementation Phase on execution of the Customer Contract.			
5	25% (of [redacted] on 31 January 2016			
6	25% (of [redacted] on delivery of Software specified in section 6.4 of this PIPP			
	CR1			
7	Initial Payment due upon Customer execution of CR1		1	
8	Progress Payment due on 31/01/2016		1	
9	Progress Payment of due on 29/02/2016		1	
10	Final Payment due upon delivery of the REM2016.R1 *		1	
	CR2			
11	Total CR 2 upon execution of CR2		1	
	CR3			

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
12	Initial payment on execution of CR3	[redacted]	1	[redacted]
13	Milestone payment 1 due on 31st July		1	
14	Milestone payment 2 due on 30th Sept		1	
15	Milestone payment due upon delivery of the REM 2016.R2 and REM mobile 2016.R2.		1	
16	Final Milestone Payment due on 15/12/2016		1	
	Sub-Total			
	GST			
	Total			

23.1.3 The remaining Price payable under Release 1 has been calculated based on the milestones specified in the table below and represent the remaining Release 1 costs for the Services and Deliverables outlined in the PIPP. A breakdown of the Price is as follows:

Table 2

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Implementation Contract			
On-site/Off-Site personnel efforts and costs required to fulfil the Services and Deliverables obligations under the Customer Contract from 01/03/2016 until 10/12/2016.	[redacted]	1	[redacted]
Remaining Licensed Software fee for Release 1			
Sub-Total			
GST			
Total			

23.1.4 The Contractor is to be paid for the items specified under 21.1.2 in accordance with the following milestones:

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
1	Initial payment of 60% of [redacted] (Contract Value prior to Change Request 4) on execution of the Agreement Letter dated 19 August 2016 or Contract whichever occurs first.	[redacted]	1	[redacted]
2	Milestone payment of 15% on 30 September 2016			

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
3	Milestone payment of 15% on 30 November 2016	[redacted]		[redacted]
4	Final payment of 10% on AAD of Release 1 Licensed Software and Go-Live of the IMS which will only occur on execution of a Customer Contract for Support.			
	Sub-Total			
	GST			
	Total			

23.2 Price Release 1-T2

23.2.1 The Price for the Contractor to undertake Release 1-T2 of the ROC Program is [redacted](ex GST) and consists of:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Design Services and Documentation	[redacted]	1	[redacted]
Build - Implementation Services and Documentation		1	
Build - Software Customisation*		1	
Build – Licences		1	
Testing and Acceptance		1	
Deployment and Project Finalisation		1	
Sub-Total			
GST			
Total			

23.2.2 The Contractor is to be paid for the items specified under 23.2.1 in accordance with the following milestones. Nothing in this milestone payment schedule alters or affects the rights, obligations and liabilities of the Parties under this Customer Contract if AAD for Release 1-Trache 2 is not achieved by Target AAD.

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
1	Mobilisation	[redacted]	1	[redacted]
2	Commencement of the Build Phase (Release 1 – T2)		1	
3	Detailed Design (Release 1-T2) complete		1	
4	All Test Cases required to be provided by the Contractor have been accepted by the Customer		1	
5	SAT completed and accepted		1	

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
6	SIT completed and accepted	[redacted]	1	[redacted]
7	UAT completed and accepted		1	
	PLUS, SUBJECT TO THE TERMS SET OUT IN MILESTONES 8, 8.1, 8.1A AND 8.1B , EITHER: **A. THE AMOUNT IN MILESTONE NO. 8; OR** **B. THE AMOUNTS IN MILESTONE NOS 8.1A AND 8.1B,** **BUT NOT BOTH.** In Milestone Nos 8, 8.1, 8.1A and 8.1B, the Target AAD means 31 May 2018, as adjusted or varied from time to time in accordance with the Customer Contract. For the avoidance of doubt: a. the Contractor will not be entitled to claim, and the Customer will not be liable to pay, any amounts under Milestone Nos 8, 8.1A or 8.1B, unless and until such time as Milestone Nos 1 to 7 have been completed and accepted by the Customer; and b. the aggregate of all amounts payable by the Customer to the Contractor under Milestone Nos 8, 8.1A and 8.1B will be capped at and will never exceed [redacted] (ex GST) (being 20% of the Price for Release 1-Tranche 2).			
8	If the AAD for Release 1-Tranche 2 is a date that is on or before the Target AAD, the Contractor will be entitled to claim the amounts set out in this Milestone No. 8 on the AAD.		1	
8.1	If the AAD for Release 1-Tranche 2 is a date that is later than the Target AAD, then Milestone No. 8 will not apply and the Contractor will instead be entitled to claim the			

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	amounts set out in Milestone Nos 8.1A and 8.1B (below) at the times, and on the conditions, set out in those Milestone Nos.			
8.1A	10% of the Price for Release 1-Tranche 2 on the Target AAD (**Milestone Amount A**), provided that: a. the Contractor has not caused or, subject to Milestone 8.1A.1, has only immaterially contributed to, the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD; b. as at the Target AAD, the Contractor has passed all relevant Acceptance Tests in respect of any Deliverables that have been performed, provided or otherwise delivered as at the Target AAD; and c. as at the Target AAD, any Deliverables that have been performed, provided or otherwise delivered are free from all Defects (other than Defects that are Minor). 8.1A.1. Without limiting any provision of the Customer Contract and provided that the Contractor has satisfied all other requirements of this Milestone No. 8.1A, the Contractor's entitlement to claim payment of Milestone Amount A will be reduced proportionately to the extent that the Contractor has immaterially contributed to the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD.	[redacted]	1	[redacted]
8.1B	The balance of the Price for Release 1-Tranche 2 (being 10% of the Price for Release 1-Tranche 2) (**Milestone Amount B**) on the earlier to occur of the		1	

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	following: a. the AAD for Release 1 – Tranche 2; or b. the date that the Customer gives written notification to the Contractor that it is has elected or determined not to go-live or deploy REM 2017.R2 into the Production Environment; or c. termination of the Customer Contract by the Customer, provided that, in the case of Milestone Nos 8.1Bb. and 8.1Bc. above: d. the Contractor has not caused or, subject to Milestone 8.1B.1, has only immaterially contributed to the circumstances giving rise to the termination, election or determination of the Customer (as applicable); e. the Contractor has passed all relevant Acceptance Tests in respect of any Deliverables that have been performed, provided or otherwise delivered as at the date of such termination, election or determination (as applicable); and f. any Deliverables that have been performed, provided or otherwise delivered as at the date of such termination, election or determination (as applicable) are free from all Defects (other than Defects that are Minor). 8.1B.1 Without limiting any provision of the Customer Contract and provided that the Contractor has satisfied all other requirements set out in this Milestone No. 8.1B, the Contractor's entitlement to claim			

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	payment of Milestone Amount B will be reduced proportionately to the extent that the Contractor has immaterially contributed to the termination, election or determination of the Customer (as applicable). 8.1B.2 Without limiting any of the Customer's rights under the Customer Contract, if: a. pursuant to Milestone No 8.1Ba., the Contractor is entitled to claim Milestone Amount B on the AAD for Release 1 – Tranche 2; and b. pursuant to clause 8.1A.1., Milestone Amount A was reduced proportionately to the extent that the Contractor immaterially contributed to the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD, then, on the AAD for Release 1 – Tranche 2 the Contractor will be entitled to claim the following amount (in addition to Milestone Amount B): c. an amount that is equal to the amount by which Milestone Amount A was reduced on account of the Contractor immaterially contributing to the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD; less d. an amount that is equal to any amounts that are due or payable by the Contractor to the Customer under or in connection with the Customer Contract as at the AAD for Release 1 – Tranche 2.			
	Sub-Total			[redacted]
	GST			

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Total			[redacted]

23.3 Total Contract Price

The total Contract Price for this Customer Contract is:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Release 1			
Table 1	[redacted]	1	[redacted]
Table 2		1	
Release 1 – T2		1	
Total Contract Price (ex GST)			
GST			
Total (including GST)			

Release 1 Time and Materials for Pre-Production and Production Support

Role	Hourly Rate (ex GST)	Estimate amount of hours	Total costs (ex GST)
System Engineer	[redacted]	80 hours	[redacted]

Hours worked by the Contractor will be recorded on an ongoing basis and without the written consent of the Customer, the total number of hours and the value of those hours worked must not exceed [redacted](excluding GST). When the hours reach 80% of the number of hours outlined in the table above, the Contractor shall inform the Customer in writing and the Parties shall agree in writing on any further hours if required.

The Contractor shall provide the Customer with a timesheet for the activities performed by the System Engineer and provide a Correctly Rendered Tax Invoice on a monthly basis. The Contractor shall be entitled to issue a tax invoice on the last day of each month for the month's efforts. Payment terms are 30 days from Correctly Rendered Tax Invoice.

Resource Rate Card

The following Resource Rate Card applies for Time and Material based work outside the current scope of this Customer Contract. The rates presented below are subject to escalation of 2.5% per annum (on 1 January) and are only valid for Release 1.

In addition to escalation, the rates for Functional Consultant (day rate Sydney), Business/Systems Analyst/Senior Support Engineer (day rate Sydney) and Developer (day rate place of employment) are subject to movement based on the one year forward rate of Raiffeisen Bank International. The rates will be adjusted according to the percentage change compared to the base rate of 1.4920 (08/08/2016) to the revised base rate measured on the 10th January.

Resource Categories	Description	Day Rate Sydney (2016)	Day Rate Sydney (2017)	Day Rate Place of Employment	Day Rate Place of Employment

				(2016)	(2017)
Project Manager - Senior/Employees Based in Sydney	Senior Project Manager responsible and accountable for overseeing one or more Project Managers' activities - 7 years' experience minimum	[redacted]			
Developer	Technical developer working on one or more delivery / workstreams in a Project - 3+ years' experience minimum				
Functional Consultant	Functional Consultant working on one or more functional streams in a project - 3 years' experience minimum				
Business/Systems Analyst/Senior Support Engineer	Analysis, high level and detailed business requirements for a number of areas - 5 years' experience minimum				
Flight	International				

23.4 Payment

23.4.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 23.1.4 and 23.2.2.

23.4.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

23.5 Termination for convenience

23.5.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with section 39 (Costs relating to a termination for convenience) of the Additional Conditions.

23.6 Liquidated Damages

23.6.1 Liquidated Damages are as described in the General Order Form.

24 Governance

24.1 Authorised Representatives

24.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Tony Eid (or delegate as nominated by the Customer from time to time); and

b) the Contractor's Authorised Representative is Martin Rampl.

24.2 Management committee

24.2.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Geoff Howard (or delegate);

b) Stefano Bianchini;

c) Jason Galer;

d) Scott Kardash;

e) Martin Rampl;

f) Christian Dorner;

g) Angela Birchall; and

h) Michael HSU

24.2.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

24.3 Management committee function

24.3.1 The function that the management committee is to:

a) review and monitor progress under the Customer Contract; and

b) carry out any other functions stated in Item 16 of the General Order Form.

24.4 Management committee meetings

24.4.1 The management committee must meet no less than once a month during the Project at the times and locations specified by the Customer.

24.5 Management committee progress report

24.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 24.4, provide the Customer with a monthly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

i) minutes and actions from the last meeting;

ii) risks and issues;

iii) details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Updated Requirements

Release 1

1. Detailed Technology Business Requirements Specification (Release 1 DTBRS for REM Release 2016.2 v2.2);
2. Architecture Specification (Release 1 Architecture Specification v5.0);
3. Functional Specification (version 6.0);
4. Non-Functional Design (version 6.0);
5. Integration Specification (version 5.0);
6. ROC-PMO-RG-0002 Updated Release 1 Product Gap Analysis V5.01;
7. Requirements Traceability Matrix (version 4.0);
8. Technology Environment Management Strategy (TEMS) (version 10.0);
9. Technology Test Strategy version 6.1;
10. RACI (version 2.00);
11. Project Communication Plan version 4.0;
12. Data Technical Analysis Outputs version 6.0;
13. Updated Project Management Plan version 4.0;
14. Implementation Strategy (Updated Technology Implementation Strategy version 3.0); and
15. High Level Solution Design version 3.0.

Release 1 – Tranche 2

The Updated Requirements for the purposes of REM 2017.R2 and REM Mobile 2017.R2 will be the Software Build Documents.

Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Angela Birchall	Project Manager	a. Overall successful performance of the project within schedule and budget; b. Overall project management activities (planning, organising, controlling); c. Participation and action item processing for Project Management related topics with the Customer and System Integrator; d. Production of Weekly Status Reports, including the Project Highlight Reports; e. Attending Management Committee Meetings; f. Managing the Contractor team on-site/off-site; g. Managing Change Requests; h. Risk management – DRICA; i. Facilitating cooperation with the Key Contractors; j. Management and execution of all Project related communication between the System Integrator, CNS and the Contractor (including alignment meetings and technical clarification)
Bjoern Brunner	Solution Architect	a. Participation and action item processing in workshops with the Customer and System Integrator; b. Solution design; c. Architectural consultancy; d. Master Data mapping support; e. Support of integration and integration validation.
Michael HSU	Account Manager	a. Responsible for the account of the Customer.
Ben Beauchamp	Commercial Manager	a. Responsible for commercial and contract management.

Name	Role	Responsibility
Armin Steinwandter & Sandish Askurn	Solution Consultant	b. Solution Consultance Support (Solution Consultant); a. Participation and action item processing in workshops with the Customer and System Integrator; b. Product & Solution consultancy; c. Data provisioning support; d. Data management and configuration support.
Neha Rodey	Requirements. & Test Manager	a. Co-ordination of all requirements, engineering and test activities for the Project; b. Preparation of all Acceptance Test activities.
Reinhard Sollböck	Project Manager CNS	a. CNS project management activities (including planning, organising and controlling) b. Management and execution of all Project related communication within CNS (including technical alignment meetings and technical clarification)
Bruce Evans	System Engineer	a. Support of System Integrator's system administration activities for Demo, Dev, SAT, SIT, UAT, Training environments until handover to the Customer; b. Master Data Import / Export (on-site).

2 Customer roles and responsibilities

Name	Role	Responsibility
Stefano Bianchini	Lead Architect	Oversight of Technical Design for ROC Program
Jason Galer	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Charlie Wahhab	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
Scott Kardash	Release 1 Lead Project Manager	Release 1 cross stream lead project management.
As required	Customer Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

Release 1-T1

_A2016.3 Schedule -
w ith ROC R1 testing (

ROC - R1 Ad hoc
schedule - V190816.

Release 1-T2

Comment [HSF1]: ST to confirm this is the correct document to be inserted.

ROC Release 1 Schedule. Version 0.9 UPDATED Issued 15/08/2016

2016

A2016.3 | Current Timeline | RG2 | SIT Deploy & Sanity Test (4 Weeks) | SIT Execution (5 Weeks) | RG3 | UAT Deploy & Sanity Test | UAT (6 Weeks) | RG4 | Regression / PVT (4 Weeks) | 10-Dec Tech Deploy | 2-Jan-17 Tech Deploy - ENV/EAM (TBC)

Prod Code - Start Data Load

Regression Goes Live

A2016.3 | Updated Timeline | RG2 | SIT Deploy & Sanity Test (4 Weeks) | SIT Execution - 8 Aug - 30 Sept (7 Weeks) | RG3 | Functional & Sanity Test | UAT Window - 3 Oct - 11 Nov (5 Weeks) | RG4 REG (2 Weeks) | PVT (1 Wk) | 10-Dec Tech Deploy | 2-Jan-17 Tech Deploy - ENV/EAM (TBC)

Prod Code - Start Data Load

Regression Goes Live

one weeks effort - To Be confirmed with ERM which may provide a

Need to ensure environment stability during PVT as the overlap with CST may impact throughput / user

Plan A- CST 7 Nov to 25 Nov (3 weeks)

Plan B- CST 14 Nov to 25 Nov (1 weeks)

Orginal

SIT ALL ROLES | Stop ing and Shut e | UAT Program 3 roles | UAT Business 3 roles | ROC Gate 1 | Cross Stream 5 roles | PVT

UAT Program All other roles | ERM Regression ALL Roles

End SIT cycle 2 (Risk)

Non Functional Testing

CURRENT

V008

Changes due to late SAT start due to commerical issues CR12 CR12 not approved yet

Did not eventuate

Stop ing and Shut e | SAT Cycle 1 | SAT Cycle 2 | SIT Cycle 1A | SIT Cycle 1B | SIT Cycle 2 | SIT Cycle 3 | Stop ing and Shut e | ROC Gate 2

Delayed by 3 working

Additional reference data mapping testing with three

SAT reduced from 10 to 7 working days

SIT Cycle 1A reduced from 10 to 5

UAT Program 3 roles | UAT Program All other roles | Cross Stream The 3 roles used for R1.0 only | ERM Regression ALL Roles | PVT

Non Functional Testing | ROC Gate 3

Functional Automation (QTP)

Option 9 A

If commercial issue resolved by COB Friday 5/8

Compressed SAT Cycle 2

Work additional days (weekend) on SAT testing - A CR will be required - additional cost.

Some low priority test cases descoped (Moderate level of risk acceptance required)

Did not eventuate

Delayed by 10 working days

SAT reduced from 10 to 5 working days

SIT Cycle 1A reduced from 10 to 5

Hard Deadline due to ERM schedule

Current

Updated Option 9 B

If commercial issue resolved by COB Friday 12/8

Compressed SAT Cycle 2

Work additional days (weekend) on SAT Testing - A CR will be required - additional cost.

~~Some low priority test cases descoped~~ (Moderate level of risk acceptance required)

Delayed by 15 working days

IMMS and REM Mobile available

SIT / UAT Overlap - 7 day overlap (priority test cases only)

SAT reduced from 10 to 7 working days

SIT Cycle 1A and 1B merged into a single cycle 1

UAT details T&C

UAT Deploy and Shake

Updated Option 9 C

If commercial issue resolved by COB Friday 19/8

Compressed SAT Cycle 2 and Compressed SIT Testing - A CR will be required - additional cost.

~~Some low priority test cases descoped~~ (Moderate level of risk acceptance required)

Delayed by 20 working days

SAT reduced from 10 to 7 working days

SIT / UAT Overlap - 7 day overlap (priority test cases only)

SIT Cycle 1A and 1B merged into a single cycle 1

UAT details T&C

UAT Deploy and Shake

V007

Changes due to IMMS Late CR??

Did not eventuate

Now SIT Cycle 1A and 1B available until 13

Non Functional Testing

Functional Automation (QTP)

A very early draft. For discussion purposes only

REM 2016.2 planning Assumes Option 9B

Delayed by 15 working days

SAT reduced from 10 to 7 working days

REM 2016.2 Deploy and Shake

SAT 2016.2 C1

Go / No Go

Auto Functional regression

UAT 2016.1 Program Tranche 2

UAT 2016.2 Business Tranche1

ERM Regression ALL Roles

Cross Stream Tranche 1

If necessary rollback to 2016.1

Auto Functional scripting and execution on R2016.1

Performance scripting 2016.1 in ????

Performance Testing 2016.1 in Pre-Prod

Performance Testing 2016.2 in Pre-Prod

UAT 2016.2 Business Tranche2 in 2017 TBA

Option 9B (15 days SAT delay)

+

REM 2016.2

+

PCR15 to add 4th SIT cycle (pending approval)

Version 10

Issued 22nd Sep 2016

SIT Cycle 4 ??

Training ?

SAT 2016.2 C1

UAT 2016.1 Program Tranche 2

UAT 2016.2 Business Tranche1

Cross Stream Tranche 1 2016.2

If necessary rollback to 2016.1

Script Maint 2016.2

Update ?? 2016.2

Auto Functional execution on R2016.2

SAT (Options 9A, 9B and 9C)	Working days	Orginal FTEs	Working hours per day	Effective Working hours per day	Additional Weekend hours	People Hours	Test Cases de-scoped
l (2 weeks)	10	1	8	6		60	
v (1 week)	5	1	10	8	8	48	20.0%

SIT Options 9A and 9B no impact

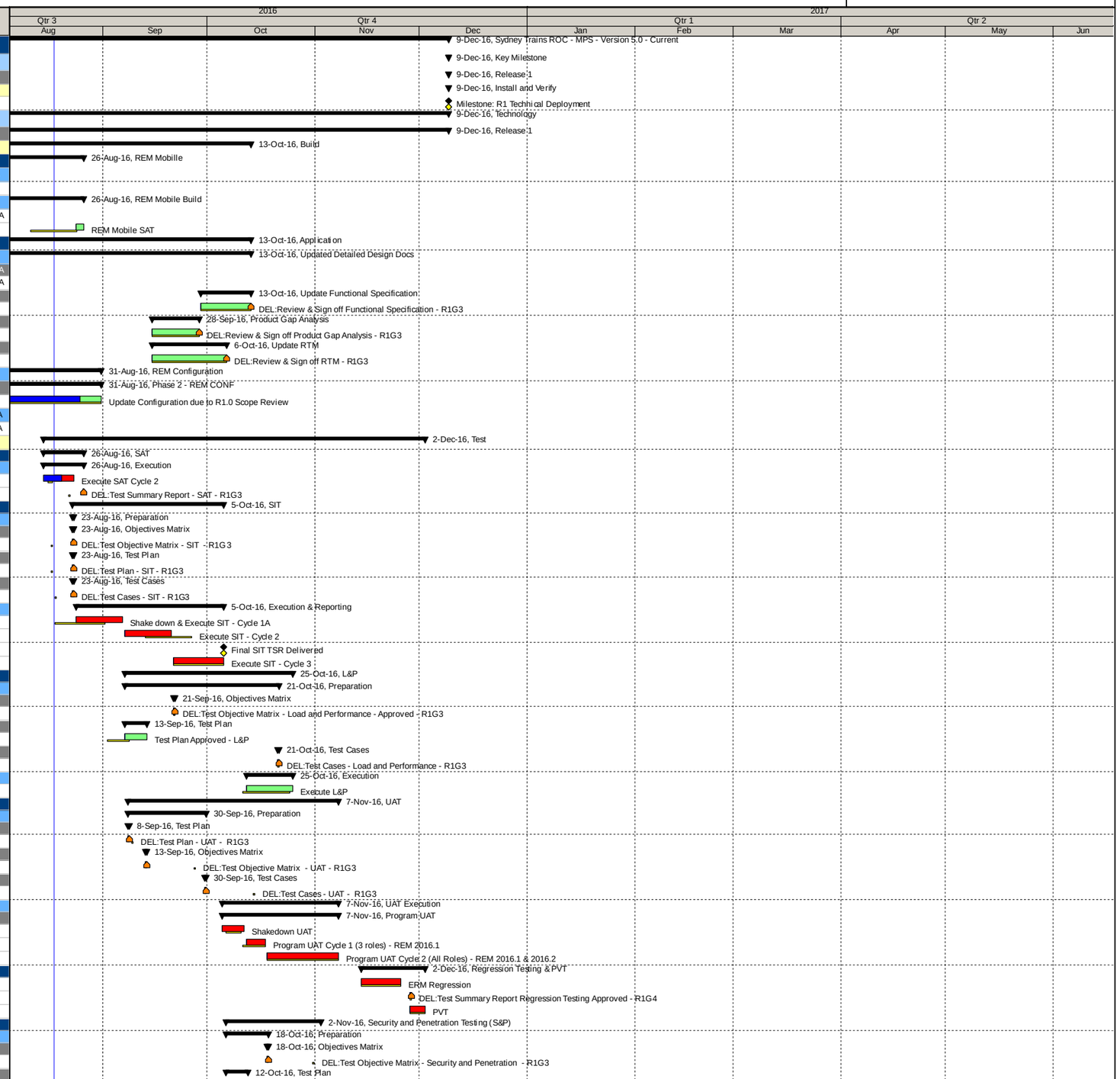
SIT 9C	Working days	Orginal FTEs	Working hours per day	Working hours per day	Additional Weekend hours	People Hours	Test Cases de-scoped
l (6 weeks)	30	3	8	6		540	
v (5 week)	25	3	9	7	0	525	2.8%

Time in leui Hours per FTE	Time in leui days
10	1.25

25	3.125

Sydney Trains Rail Operations Center (ROC)
Master Program Schedule Version 5.0 - *DRAFT - Work In Progress - ROC - All Streams*

#	Activity ID	Activity Name	Start	Finish
1	**Sydney Trains ROC - MPS - Version 5.0 - Current**		8-Feb-16 A	9-Dec-16
2	**Key Milestone**		9-Dec-16	9-Dec-16
3	**Release 1**		9-Dec-16	9-Dec-16
4	**Install and Verify**		9-Dec-16	9-Dec-16
5	TEC-KM-1150	Milestone: R1 Technical Deployment		9-Dec-16*
6	**Technology**		8-Feb-16 A	9-Dec-16
7	**Release 1**		8-Feb-16 A	9-Dec-16
8	**Build**		8-Feb-16 A	13-Oct-16
9	**REM Mobille**		8-Feb-16 A	26-Aug-16
10	**REM Mobile Functional Specification**		13-Apr-16 A	6-May-16 A
11	TEC-TR1-910270	DEL:REM Mobile Functional Specification - R1G3	13-Apr-16 A	6-May-16 A
12	**REM Mobile Build**		8-Feb-16 A	26-Aug-16
13	TEC-TR1-910330	REM Mobile Development, Build & System Testing	8-Feb-16 A	27-May-16 A
14	TEC-TR1-910380	REM Mobile SAT	24-Aug-16*	26-Aug-16
15	**Application**		18-Apr-16 A	13-Oct-16
16	**Updated Detailed Design Docs**		18-Apr-16 A	13-Oct-16
17	**Updated DTBRS**		18-Apr-16 A	10-May-16 A
18	TEC-TR1-80210	DEL: Technical Business Requirements (DTBRS) - R1G3	18-Apr-16 A	10-May-16 A
19	**Update Functional Specification**		29-Sep-16	13-Oct-16
20	TEC-TR1-911680	DEL:Review & Sign off Functional Specification - R1G3	29-Sep-16	13-Oct-16
21	**Product Gap Analysis**		15-Sep-16	28-Sep-16
22	TEC-TR1-913030	DEL:Review & Sign off Product Gap Analysis - R1G3	15-Sep-16	28-Sep-16
23	**Update RTM**		15-Sep-16	6-Oct-16
24	TEC-TR1-911840	DEL:Review & Sign off RTM - R1G3	15-Sep-16	6-Oct-16
25	**REM Configuration**		1-Jul-16 A	31-Aug-16
26	**Phase 2 - REM CONF**		1-Jul-16 A	31-Aug-16
27	TEC-TR1-40310	Update Configuration due to R1.0 Scope Review	1-Jul-16 A	31-Aug-16
28	**REM Core Product Development**		28-Apr-16 A	28-Apr-16 A
29	TEC-TR1-90720	REM Core Product Development Complete		28-Apr-16 A
30	**Test**		15-Aug-16 A	2-Dec-16
31	**SAT**		15-Aug-16 A	26-Aug-16
32	**Execution**		15-Aug-16 A	26-Aug-16
33	TEC-TR1-12010	Execute SAT Cycle 2	15-Aug-16 A	23-Aug-16
34	TEC-TR1-12000	DEL:Test Summary Report - SAT - R1G3	26-Aug-16	26-Aug-16
35	**SIT**		23-Aug-16	5-Oct-16
36	**Preparation**		23-Aug-16	23-Aug-16
37	**Objectives Matrix**		23-Aug-16	23-Aug-16
38	TEC-TR1-20350	DEL:Test Objective Matrix - SIT - R1G3	23-Aug-16	23-Aug-16
39	**Test Plan**		23-Aug-16	23-Aug-16
40	TEC-TR1-20390	DEL:Test Plan - SIT - R1G3	23-Aug-16	23-Aug-16
41	**Test Cases**		23-Aug-16	23-Aug-16
42	TEC-TR1-20430	DEL:Test Cases - SIT - R1G3	23-Aug-16	23-Aug-16
43	**Execution & Reporting**		24-Aug-16	5-Oct-16
44	TEC-TR1-12100	Shake down & Execute SIT - Cycle 1A	24-Aug-16	6-Sep-16
45	TEC-TR1-911850	Execute SIT - Cycle 2	7-Sep-16	20-Sep-16
46	TEC-TR1-911880	Final SIT TSR Delivered		5-Oct-16
47	TEC-TR1-911890	Execute SIT - Cycle 3	21-Sep-16	5-Oct-16
48	**L&P**		7-Sep-16	25-Oct-16
49	**Preparation**		7-Sep-16	21-Oct-16
50	**Objectives Matrix**		21-Sep-16	21-Sep-16
51	TEC-TR1-111170	DEL:Test Objective Matrix - Load and Performance - Approved - R1G3	21-Sep-16	21-Sep-16
52	**Test Plan**		7-Sep-16	13-Sep-16
53	TEC-TR1-111200	Test Plan Approved - L&P	7-Sep-16	13-Sep-16
54	**Test Cases**		21-Oct-16	21-Oct-16
55	TEC-TR1-111250	DEL:Test Cases - Load and Performance - R1G3	21-Oct-16	21-Oct-16
56	**Execution**		12-Oct-16	25-Oct-16
57	TEC-TR1-12020	Execute L&P	12-Oct-16	25-Oct-16
58	**UAT**		8-Sep-16	7-Nov-16
59	**Preparation**		8-Sep-16	30-Sep-16
60	**Test Plan**		8-Sep-16	8-Sep-16
61	TEC-TR1-111420	DEL:Test Plan - UAT - R1G3	8-Sep-16	8-Sep-16
62	**Objectives Matrix**		13-Sep-16	13-Sep-16
63	TEC-TR1-111370	DEL:Test Objective Matrix - UAT - R1G3	13-Sep-16	13-Sep-16
64	**Test Cases**		30-Sep-16	30-Sep-16
65	TEC-TR1-111460	DEL:Test Cases - UAT - R1G3	30-Sep-16	30-Sep-16
66	**UAT Execution**		5-Oct-16	7-Nov-16
67	**Program UAT**		5-Oct-16	7-Nov-16
68	TEC-TR1-12140	Shakedown UAT	5-Oct-16	11-Oct-16
69	TEC-TR1-12210	Program UAT Cycle 1 (3 roles) - REM 2016.1	12-Oct-16	17-Oct-16
70	TEC-TR1-12220	Program UAT Cycle 2 (All Roles) - REM 2016.1 & 2016.2	18-Oct-16	7-Nov-16
71	**Regression Testing & PVT**		14-Nov-16	2-Dec-16
72	TEC-TR1-913000	ERM Regression	14-Nov-16	25-Nov-16
73	TEC-TR1-913090	DEL:Test Summary Report Regression Testing Approved - R1G4	28-Nov-16	28-Nov-16
74	TEC-TR1-913040	PVT	28-Nov-16	2-Dec-16
75	**Security and Penetration Testing (S&P)**		6-Oct-16	2-Nov-16
76	**Preparation**		6-Oct-16	18-Oct-16
77	**Objectives Matrix**		18-Oct-16	18-Oct-16
78	TEC-TR1-911230	DEL:Test Objective Matrix - Security and Penetration - R1G3	18-Oct-16	18-Oct-16
79	**Test Plan**		6-Oct-16	12-Oct-16



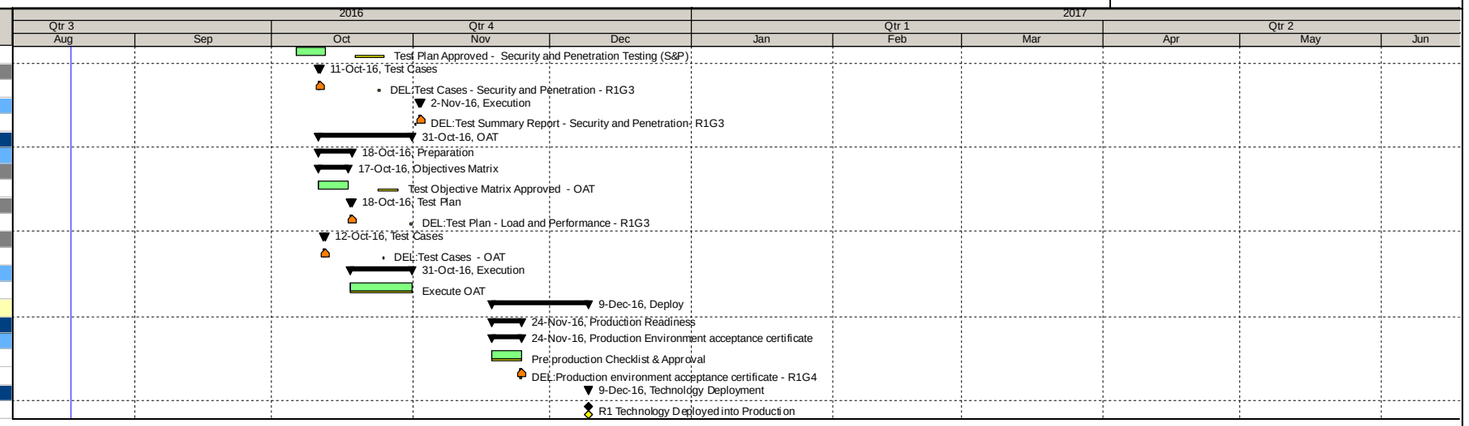
Sydney Trains ROC - MPS - Version 5.0 - Current - 19-Aug-16
Data Date: 18-Aug-16

Baseline
Remaining Work
Critical Remaining Work
Physical % Complete
Baseline Milestone
Milestone
Deliverable
Summary

Date	Revision	Checked	Approved
19-Aug-16	Version 5.0 - Draft for Discussion	EA	

Sydney Trains Rail Operations Center (ROC)
Master Program Schedule Version 5.0 - *DRAFT - Work In Progress - ROC - All Streams*

#	Activity ID	Activity Name	Start	Finish
80	TEC-TR1-911260	Test Plan Approved - Security and Penetration Testing (S&P)	6-Oct-16	12-Oct-16
81	**Test Cases**		11-Oct-16	11-Oct-16
82	TEC-TR1-911310	DEL:Test Cases - Security and Penetration - R1G3	11-Oct-16	11-Oct-16
83	**Execution**		2-Nov-16	2-Nov-16
84	TEC-TR1-911400	DEL:Test Summary Report - Security and Penetration- R1G3	2-Nov-16	2-Nov-16
85	**OAT**		11-Oct-16	31-Oct-16
86	**Preparation**		11-Oct-16	18-Oct-16
87	**Objectives Matrix**		11-Oct-16	17-Oct-16
88	TEC-TR1-911010	Test Objective Matrix Approved - OAT	11-Oct-16	17-Oct-16
89	**Test Plan**		18-Oct-16	18-Oct-16
90	TEC-TR1-911060	DEL:Test Plan - Load and Performance - R1G3	18-Oct-16	18-Oct-16
91	**Test Cases**		12-Oct-16	12-Oct-16
92	TEC-TR1-911100	DEL:Test Cases - OAT	12-Oct-16	12-Oct-16
93	**Execution**		18-Oct-16	31-Oct-16
94	TEC-TR1-911170	Execute OAT	18-Oct-16	31-Oct-16
95	**Deploy**		18-Nov-16	9-Dec-16
96	**Production Readiness**		18-Nov-16	24-Nov-16
97	**Production Environment acceptance certificate**		18-Nov-16	24-Nov-16
98	TEC-TR1-112400	Pre production Checklist & Approval	18-Nov-16	24-Nov-16
99	TEC-TR1-112409	DEL:Production environment acceptance certificate - R1G4	24-Nov-16	24-Nov-16
100	**Technology Deployment**		9-Dec-16	9-Dec-16
101	TEC-TR1-12230	R1 Technology Deployed into Production	9-Dec-16	



Baseline | Physical % Complete | Deliverable
Remaining Work | Baseline Milestone | Summary
Critical Remaining Work | Milestone

Date	Revision	Checked	Approved
19-Aug-16	Version 5.0 - Draft for Discussion	EA	

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

The overall risk management process to be applied can be summarised in the figure below.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

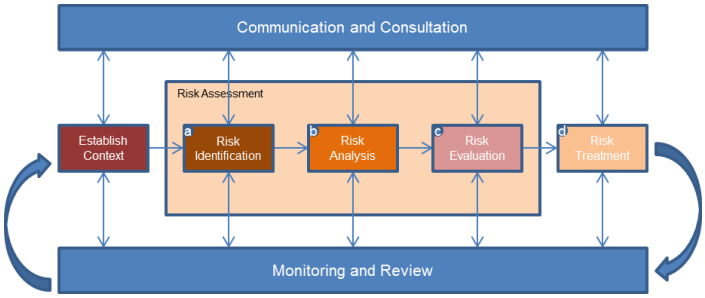


Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

Appendix E - Acceptance Form.doc

AJILON MILESTONE ACCEPTANCE

CLIENT NAME :	**Sydney Trains**
CONTRACT :	
PROJECT :	

Milestone Details

The following Milestones have been met under the above project:

Milestone/ Deliverable	Evidence	Date Provided/Met

The above Milestones/ Deliverables have been provided/ met :

Signature _____

Project Director _____

Date _____

On Behalf Of Ajilon Consulting Pty Ltd

Signature _____

Program Manager _____

Date _____

On Behalf Of Sydney Trains

[Ajilon Commercial use]		
Description	**Amount**	**Comments/Reference**
Client Purchase Order Value	$	
Value of Previous Claims	$	
Value of this Claim	$	Payable to Ajilon
Total Value this Claim	**$**	Payable by Sydney Trains
Balance Outstanding	$	

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The “doer” creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one “A” can be assigned to an action. Also known as the "Owner” of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. “In the Loop”
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. “Keep in the Picture”

The following is the RACI is for Release 1:

#	Release 1 Detailed Design	Contractor	Systems Integrator	Customer
1	High Level Solution Design	R	A,R	C
2	Release 1 Architecture Specification	R	A,R	C
3	Release 1 Functional Specification	R	AR	C
4	Release 1 Non-Functional Design	R	AR	C
5	Release 1 Integration Specification	R	A,R	C
6	Project Communication Plan for Release 1	C	A,R	C
7	Release 1 Data Management Plan	R	A,R	C
8	Release 1 Data Technical Analysis Outputs	R	A,R	R
9	Release 1 Technology Implementation Strategy	R	A,R	C
10	Release 1 Technology Implementation Plan (Template)	R	A,R	C
11	Technology Test Strategy	R	A,R	C
12	Updated Project Management Plan	R	A,R	C
13	RACI	C	A,R	C
14	Updated Release 1 Product Gap Analysis	R	A	I
15	Release 1 System Test Plan	R	A,R	C
16	Requirements Traceability Matrix updated for Release 1	R	A,R	C
17	Technology Environment Management Strategy	R	A,R	C

#	Release 1 Detailed Design	Contractor	Systems Integrator	Customer
18	Operating Model	R	A,R	R
19	Draft recommended ROC organisational structure	R	A,R	R
20	Change Impact Analysis (Release 1)	R	A,R	C
21	Release 1 Training Needs Analysis	R	A,R	C

	Release 1 Updated Detailed Design	Contractor	Systems Integrator	Customer
1	High Level Solution Design	R	A,R	C
2	Release 1 Architecture Specification	R	A,R	C
4	Release 1 Non-Functional Design	R	AR	C
5	Release 1 Integration Specification	R	A,R	C
11	Technology Test Strategy	R	A,R	C
12	Project Management Plan	R	A,R	C
13	RACI	C	A,R	C
15	Technology Environment Management Strategy	C	A,R	C
16	Release 1 Data Technical Analysis Outputs	C	A,R	R
17	Release 1 Data Management Plan	R	A,R	C
18	Technology Communications Plan	C	A,R	C
20	Release 1 System Test Plan	R	A,R	C

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
1	Interface Documentation for SIRI (REM 2016.1)	A,R	C	C
2	Shadow Data Base Documentation	A,R	C	C
3	Interface Documentation for Notification Functionality (REM 2016.1)	A,R	C	C
4	Documentation of the REM 2016.1 Data Model	A,R	I	I
5	User Manual for Emergency Management Client (EMC) (REM 2016.1)	A,R	I	I
6	User Manual for Data Management Client (DMC) (REM 2016.1)	A,R	I	I
7	User Manual for Web Portal (REM 2016.1)	A,R	I	I
8	User Manual for REM Mobile 2016.R1	A,R	I	I
9	IMS (REM 2016.R1) Licensed Software	A,R	C	C
10	Licensed Software (REM Mobile 2016.R1)	A,R	C	C
11	System Test Summary Report (REM 2016.R1)	A,R	C	I
	REM Mobile Non-Production Demployment			

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
14	REM Mobile Configuration Process Documentation	A, R	C	C
15	REM Mobile Deployment Process Documentation	A,R	C	C
16	REM Mobile Hand-over to support Documentation (handover of non-production processes & procedures)	A,R	C	C
17	Update of REM Mobile Functional Specification (2016.R1)	A, R	R	I
18	Update of REM Mobile Test Objective Matrix (2016.R1)	A, R	R	I
19	Update of REM Mobile User Manual (2016.R1)	A, R	R	I
20	Update of Requirements Traceability Matrix (2016.R1)	A, R	R	I
21	Update of GAP Analysis (2016.R1)	A, R	R	I
	REM & REM Mobile 2016.R2			
22	REM System/Software Delivery (REM Release 2016.R2)	A,R	C	C
23	REM System/Software Delivery (REM Mobile 2016.R2)	A,R	C	C
24	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	R	A,R	C
25	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	R	A,R	C
26	Update of Interface Documentation for SIRI (REM 2016.R2)	A,R	C	C
27	Interface Documentation for Notification Functionality (REM 2016.R2)	A,R	C	C
28	Update Documentation of the REM 2016.2 Data Model	A,R	C	C
29	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	A,R	C	C
30	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	A,R	C	C
31	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	A,R	C	C
32	Update Requirements Traceability Matrix for REM 2016.R2	R	A,R	C
33	Test Summary Report for System Test (REM Release 2016.R2)	AR	I	I
34	Test Summary Report for System Test (REM Mobile 2016.R2)	AR	I	I
35	**Testing Deliverables**			

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
	SAT			
3	SAT Test Objective Matrix (2016.R1)	A,R	C	C
37	SAT Test Cases (2016.R1)	A,R	C	C
38	SAT Test Summary Report (2016.R1)	A,R	C	C
39	SAT Test Objective Matrix (2016.R2)	A,R	C	C
40	SAT Test Cases (2016.R2)	A,R	C	C
41	SAT Test Summary Report (2016.R2)	A,R	C	C
	System Testing for TIBCO and Other Interfaces			
42	Detailed Test Plan	C	A,R	C
43	Test Objective Matrix	C	A,R	C
44	Test Cases	C	A,R	C
45	Test Summary Report	C	A,R	C
	SIT			
46	Detailed Test Plan	R	A,R	C
47	Test Objective Matrix	C	A,R	C
48	Test Cases	C	A,R	C
49	Test Summary Report	C	A,R	C
	Load and Performance Testing			
50	Detailed Test Plan	C	A,R	C
51	Test Objective Matrix	C	A,R	C
52	Test Cases	C	A,R	C
53	Test Summary Report	C	A,R	C
	User Acceptance Testing			
54	Detailed Test Plan	C	A,R	C
55	Test Objective Matrix	C	A,R	C
56	Test Cases	C	A,R	C
57	Test Summary Report	C	A,R	C
	Operational Acceptance Testing			
58	Detailed Test Plan	C	C	A,R
59	Test Objective Matrix	C	C	A,R
60	Test Cases	C	C	A,R
61	Test Summary Report	C	C	A,R
	Security and Penetration Testing			
62	Detailed Test Plan	C	C	A,R
63	Test Objective Matrix	C	C	A,R
64	Test Cases	C	C	A,R

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
65	Test Summary Report	C	C	A,R
	Cross Stream Testing			
66	Detailed Test Plan	C	C	A,R
67	Test Objective Matrix	C	C	A,R
68	Test Cases	C	C	A,R
69	Test Summary Report	C	C	A,R
	Deployment Deliverables			
70	Hand Over Plan	R	A,R	C
71	Post Implementation Verification Report	C	C	A,R
	Training			
72	Train the Trainer Training Material	A,R	I	I
73	System Administration Train Material	A,R	I	I
74	Application Administration Training Material	A,R	I	I

The following is the RACI is for Release 1 Tranche 2:

#	Release 1 T2 Deliverables	Contractor	Systems Integrator	Customer
	R1 T2 Detailed Design Deliverables			
1.	Updated Architecture Specification	R	A,R	C
2.	Updated Functional Specification	R	A,R	C
3.	Updated Requirements Traceability Matrix	R	A,R	C
4.	Updated Integration Specification	R	A,R	C
5.	Updated Product Gap Analysis	R	A,R	C
6.	Updated Interface Design Specification per Interface	C	A,R	C
7.	Updated Non-Functional Design	R	A,R	C
8.	Interface Design Specification per Interface (Draft only, as this will be finalised in the Build Phase)	C	A,R	C
9.	Updated Data Technical Analysis Outputs	R	A,R	C
10.	RACI	C	A,R	C
11.	DP1 T2 Master Test Plan Draft	C	A,R	C

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
12	Interface Documentation for SIRI (REM 2017.2)	A,R	C	C
13	Documentation of the REM REM 2017.2Data Model	A,R	I	I
14	User Manual for Emergency Management Client (EMC) (REM REM 2017.2)	A,R	I	I
15	User Manual for Data Management Client (DMC) (REM REM 2017.2)	A,R	I	I
16	User Manual for Web Portal (REM REM 2017.2)	A,R	I	I
17	User Manual for REM Mobile REM 2017.2	A,R	I	I
18	IMS (REM REM 2017.2) Licensed Software	A,R	C	C
19	Licensed Software (REM Mobile REM 2017.2)	A,R	C	C
20	System Test Summary Report (REM REM 2017.2)	A,R	C	I
REM Mobile Non-Production Deployment				
21	REM Mobile Configuration Process Documentation	A,R	C	C
22	REM Mobile Deployment Process Documentation	A,R	C	C
23	REM Mobile Hand-over to support Documentation (handover of non-production processes & procedures)	A,R	C	C
24	Update of REM Mobile Functional Specification (REM 2017.2)	R	A,R	I
25	Update of REM Mobile Test Objective Matrix (REM 2017.2)	R	A,R	I
26	Update of REM Mobile User Manual (2017.R2)	A,R	C	I
27	Update of Requirements Traceability Matrix (2017.R2)	R	A,R	I
28	Update of GAP Analysis (2017.R2)	R	A,R	I
REM & REM Mobile 2017.R2				
29	REM System/Software Delivery (REM Release 2017.R2)	A,R	C	C
30	REM System/Software Delivery (REM Mobile 2017.R2)	A,R	C	C
31	Update of Gap Analysis (REM and REM Mobile Release 2017.R2)	R	A,R	C
32	Update of Functional Specification (REM and REM	R	A,R	C

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
	Mobile Release 2017.R2)			
33	Update of Interface Documentation for SIRI (REM 2017.R2)	A,R	C	C
34	Interface Documentation for Notification Functionality (REM 2017.R2)	A,R	C	C
35	Update Documentation of the REM 2017.2 Data Model	A,R	C	C
36	Update of User Manual for Emergency Management Client (EMC) (REM 2017.R2)	A,R	C	C
37	Update of User Manual for Data Management Client (DMC) (REM 2017.R2)	A,R	C	C
38	Update of User Manual for REM Mobile (REM Mobile 2017.R2)	A,R	C	C
39	Update Requirements Traceability Matrix for REM 2017.R2	R	A,R	C
40	Test Summary Report for System Test (REM Release 2017.R2)	A,R	I	I
41	Test Summary Report for System Test (REM Mobile 2017.R2)	A,R	I	I
Testing Deliverables				
	SAT			
42	SAT Test Objective Matrix (2016.R1)	A,R	C	C
43	SAT Test Cases (2016.R1)	A,R	C	C
44	SAT Test Summary Report (2016.R1)	A,R	C	C
45	SAT Test Objective Matrix (2016.R2)	A,R	C	C
46	SAT Test Cases (2016.R2)	A,R	C	C
47	SAT Test Summary Report (2016.R2)	A,R	C	C
	System Testing for TIBCO and Other Interfaces			
48	Detailed Test Plan	C	A,R	C
49	Test Objective Matrix	C	A,R	C
50	Test Cases	C	A,R	C
51	Test Summary Report	C	A,R	C
	SIT			
52	Detailed Test Plan	R	A,R	C

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
53	Test Objective Matrix	C	A,R	C
54	Test Cases	C	A,R	C
55	Test Summary Report	C	A,R	C
	Load and Performance Testing			
56	Detailed Test Plan	C	A,R	C
57	Test Objective Matrix	C	A,R	C
58	Test Cases	C	A,R	C
59	Test Summary Report	C	A,R	C
	User Acceptance Testing			
60	Detailed Test Plan	C	A,R	C
61	Test Objective Matrix	C	A,R	C
62	Test Cases	C	A,R	C
63	Test Summary Report	C	A,R	C
	Operational Acceptance Testing			
64	Detailed Test Plan	C	C	A,R
65	Test Objective Matrix	C	C	A,R
66	Test Cases	C	C	A,R
67	Test Summary Report	C	C	A,R
	Security and Penetration Testing			
68	Detailed Test Plan	C	C	A,R
69	Test Objective Matrix	C	C	A,R
70	Test Cases	C	C	A,R
71	Test Summary Report	C	C	A,R
	Cross Stream Testing			
72	Detailed Test Plan	C	C	A,R
73	Test Objective Matrix	C	C	A,R
74	Test Cases	C	C	A,R
75	Test Summary Report	C	C	A,R
Deployment Deliverables				
76	Hand Over Plan	R	A,R	C
77	Post Implementation Verification Report	C	C	A,R

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
Training				
78	Train the Trainer Training Material	A,R	I	I
79	System Administration Train Material	A,R	I	I
80	Application Administration Training Material	A,R	I	I

Appendix G – Acceptance Criteria

1 Approval Criteria for Project Preparation Phase

1.1 The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

2 Approval Criteria for Detailed Design (Release 1) Phase and Detailed Design (Release 1-T2) Phase

2.1 Standard List of Approval Criteria

2.1.1 The Approval Criteria for all document Deliverables are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase or as agreed after the Project Preparation Phase (if applicable);

b) that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (sections 5.4 and 12.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design Phase, following the completion of the initial Customer/ Contractor workshops.

2.1.2 The Deliverable shall be deemed fit for purpose when all criteria expressed above have been met.

2.1.3 AAD for a document that is a Deliverable occurs when that document is approved by the Customer under the "Approval of Documents" process set out in the Additional Conditions.

3 Acceptance Criteria for other Deliverables

3.1.1 The Acceptance Criteria for Deliverables other than document Deliverables are the acceptance criteria for those Deliverables as set out in the Deliverables developed in the relevant Detailed Design Phase for that Deliverable, or any other agreed criteria that may be necessary to demonstrate that the Deliverable meets the Requirements.

Appendix H – Testing Baseline

ROC-BCT-SG-0001
v2 0_ROC Program T

ROC **Program Test Management Framework**

Rail Operations Centre
Program Test Management Framework

Program Management Document Control	
Project or Program	Rail Operations Centre (ROC)

ROC Program Test Management Framework

Document Ownership Information

TRIM#

Capital Register ID	3141.02

Sponsor	Howard Collins, Chief Executive	Sydney Trains

Sponsor's Delegate	TBC	Future Network Delivery Directorate
Program Director	Matt McInnes, ROC Program Director	Future Network Delivery Directorate

Document Name and Version Control

(Circulated versions only)

Document Name & Location		*ROC-BCT-SG-0001 v2.0 ROC Program Test Management Framework (Approved)*	
Version	**Date**	**Author**	**Reason for Issue / Changes Included**
v0.1	12 Dec 2014	Simon Baker	Initial draft for internal program review
V0.2	13 Jan 2015	Simon Baker	Updated with feedback from internal Program review
V1.0	15 Jan 2015	Simon Baker	Updated with feedback from Stefano Bianchini for distribution to technology vendors participating in HLSD
V1.1	27 Nov 2015	Simon Baker	Updated for internal Program review
V1.2	6 Mar 2016	Simon Baker	Updated with feedback from internal Program review and reissued for internal Program endorsement
V1.3	23 Mar 2016	Simon Baker	Version internally endorsed by the Program. Shared with external Program stakeholders for review
V2.0	15 April 2016	Simon Baker	Updated with feedback from external Program stakeholder review and reissued for external Program stakeholder endorsement

ROC Program Test Management Framework

Document Approvals, Endorsements and Distribution

Stakeholders are requested to approve/endorse this document as an agreed ROC Program Test Management Framework baseline as at ROC Release 1, Gate 2. That is, the document outlines a Test Management Framework which is appropriate for the ROC Program and upon which subsequent, more detailed test planning documentation should be based. In the event thinking in relation to the Test Management Framework changes in a material way throughout the life of the ROC Program, this document will be iterated and redistributed for review, approval/endorsement to provide an updated baseline.

Note – Resources named below are requested to share this document within their domain(s) as required. *This document may need to be socialised with new vendors engaged on the ROC Program after it has been baselined for ROC Release 1, Gate 2.*

Approvers

	Name	Position	Division/Group	Capacity	Role	Signature	Date
1	Matt McInnes	ROC Program Director	ROC Program, Customer Service Directorate	Service Provider	Approver	RE Draft ROC Program Test Manage	16 Mar 2016
2	Aram Khashabian	Business Continuity & Program Testing Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Approver	RE Draft ROC Program Test Manage	18 Mar 2016

Endorsers

	Name	Position	Division/Group	Capacity	Role	Signature	Date
3	Stuart Middleton	General Manager Network Operations	Network Operations, Operations Directorate	Stakeholder	Endorser	Re ROC Program Test Management Fra	10 June 2016
4	Paul Cassar	Control & Co-ordination Manager	Network Maintenance, Maintenance Directorate	Stakeholder	Endorser	RE ROC Program Test Management Fra	19 Apr 2016
5	Michael Mercieca	General Manager Customer Information & Intelligence	Customer Information & Intelligence, Customer Service Directorate	Stakeholder	Endorser	RE ROC Program Test Management Fra	29 Apr 2016
6	Sukanya Young	Portfolio Manager, Operations & Customer Service	Application Portfolio Delivery, Finance & Corp Services Directorate	Stakeholder	Endorser	FW ROC Program Test Management Fra	6 May 2016
7	Cathmar Campbell	Business Solutions Manager	Business Solutions & Change, Finance & Corp Services Directorate	Stakeholder	Endorser	RE ROC Program Test Management Fra	28 Apr 2016

	Name	Position	Division/Group	Capacity	Role	Signature	Date
8	Malcolm Jones	Systems Integrator, Test Manager, Ajilon	ROC Program Vendor Representative	Service Provider	Endorser	RE Draft ROC Program Test Manage	15 Mar 2016
9	Julian Molzer	REM Project Manager, Frequentis	ROC Program Vendor Representative	Service Provider	Endorser	RE Draft ROC Program Test Manage	16 Mar 2016
10	TBC	CIMS Project Manager	ROC Program Vendor Representative	Service Provider	Endorser	NA	NA
11	TBC	DTTS Project Manager	ROC Program Vendor Representative	Service Provider	Endorser	NA	NA
12	Andrew Constantinou	Solution Integration Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	RE Draft ROC Program Test Manage	18 Mar 2016
13	Charles Hanna	Transformation & Change Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	RE Draft ROC Program Test Manage	18 Mar 2016
14	Mark Pigot	Technology Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	FW Draft ROC Program Test Manage	15 Mar 2016
15	Andrew Parker	Infrastructure Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	RE Draft ROC Program Test Manage	15 Mar 2016
16	Phil Everingham	PMO Snr Project Manager, ROC Program	ROC Program, Customer Service Directorate	Stakeholder	Endorser	RE Draft ROC Program Test Manage	15 Mar 2016

Distribution

	Name	Position	Division/Group	Capacity	Role
17	Peter Savage	Portfolio Manager, Integration	Application Portfolio Delivery, Finance & Corp Services Directorate	Stakeholder	Distribution
18	Christina Phillips	Business Planning & Performance Manager	Business Planning & Performance, Operations Directorate	Stakeholder	Distribution
19	Heath Mulholland	Train Planning Manager	Operations Planning, Operations Directorate	Stakeholder	Distribution
20	Steve Chay	RMC Manager,	Network Operations, Operations Directorate	Stakeholder	Distribution
21	Carl Hill	Portfolio Manager Service Delivery Practice	Application Portfolio Delivery, Finance & Corp Services Directorate	Stakeholder	Distribution

Glossary of Terms and Abbreviations

Term/Abbreviation	Description
AEO	Authorised Engineering Organisations
ASA	Asset Standards Authority
BAFO	Best and Final Offer
BAU	Business As Usual
BCP	Business Continuity Plan
CAB	Change Approval Board
CIMS	Customer Information Management System
CMP	Configuration Management Plan
COTS	Configurable Off The Shelf
DRICA-SBA	Register of Dependencies, Risks, Issues, Changes, Actions, Scope, Benefits & Assumptions
DTP	Detailed Test Plan
DTTS	'Day of Operations' Train Timetabling System
E2E	End To End
ERM	Enterprise Release Management
HLSD	High Level Solution Design
HP ALM	HP Application Lifecycle Management
IAP	Infrastructure Assurance Plan
REM	Incident Management System
L&P	Load & Performance
NFR	Non-Functional Requirement
ONRSR	Office of the National Rail Safety Regulator
OVDS	Operational Visual Display System
PCR	Program Change Request
PCE	Phase Containment Effectiveness
PEFM	Project Execution Framework Methodology. PEFm (TfNSW) templates are used in Sydney Trains IT as the Technology layer (System Development Lifecycle) for IT projects or projects with an IT component
PIV	Post Implementation Verification
PMLC	Project Management Life Cycle. PMLC (Sydney Trains) templates must be used when seeking Capital funding approval through the establishment of business cases to analyse, justify, track and report on costs and benefits for the investment of Sydney Train projects.
Program	ROC Program
PT	Performance Testing
QAS	Quality Assurance Services
QTP	Quick Test Professional
RfP	Request for Proposal
RMP	Requirements Management Plan
RMC	Rail Management Centre
ROC	Rail Operations Centre
ROC Solution	The baseline ROC Solution Design defines the ROC Solution Scope of delivery for technology, people and process, and infrastructure to achieve the desired program outcomes and to realise the end benefits in accordance with the business and stakeholder expectations.

Term/Abbreviation	Description
RQA	Requirements Quality Assurance
SAPF	Systems Assurance & Planning Framework
SIT	System Integration Testing
SME	Subject Matter Expert
SoW	Statement of Work
ST	System Testing
T&C	Transformation & Change
Test Cycle	Test execution for a phase is divided into Test Cycles. Each Cycle of execution will have an agreed number of test cases which will be executed during the cycle within the specified duration of the phase.
TEMS	Technology Environment Management Strategy
TfNSW	Transport for NSW
TID	Technical Infrastructure Design
TOM	Test Objectives Matrix
TSR	Test Summary Report
UAT	User Acceptance Testing
UI	User Interface
UT	Unit Testing

ROC Program Test Management Framework

Table of Contents

1 Executive Summary

This document positions the ROC Program Test Management Framework within the high level context of the ROC Program:

- Solution
- Team structure
- Release Strategy
- Systems Assurance and Planning Framework (SAPF)

The ROC Program solution will include the following components:

- New technology systems, integrated with existing technologies
- New ways of working including new Business processes and organisational structure
- New infrastructure including property and operational technology systems

All these components must ultimately combine to form a ROC Solution which can be demonstrated to be safe, complete, correct and fit for purpose. While the Program has been structured into delivery streams, with this outcome in mind it follows stream deliverables should be produced in the context of the final solution from requirements, through to design, build, testing and acceptance.

The SAPF is a series of plans which outline how assurance will be applied across the ROC Program. Verification and Validation (V&V) is one of many methods by which the ROC Program will assure deliverables. Testing is a sub-set of V&V and as such is an important element of the ROC Program's overall assurance strategy.

This document outlines how ROC Program testing will be delivered and fit within the wider Program approach to V&V and the SAPF.

The ROC Program Test Management Framework reflects the ROC Program Team structure. Within streams, components of the solution should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components. This pattern will continue until stream deliverables are brought together and the solution tested as a whole.

Progressive assurance and testing will help build both the Business and Program confidence required to implement the solution into Business operations and 'go-live'.

2 Introduction

2.1 ROC Overview

The Rail Operations Centre (ROC) is a Sydney Trains led program seeking to improve management of 'day of operations' activities and improve the delivery of services for Sydney Trains, NSW Trains and their customers via the delivery of:

- Infrastructure: a new ROC building
- People: co-location of 'day of operations' functions into the ROC
- Technology: four new system capabilities
- Processes: new improved ways of working enabled by all of the above

2.2 ROC Vision

The ROC Program supports the strategy of Transport for New South Wales (TfNSW), Sydney Trains, and NSW Trains to transform the customer experience in line with their vision of "putting the customer at the heart of everything we do".

Better coordination, communication, and management will be achieved through the ROC, which will co-locate teams and transform the processes, systems, and communications for 'day of operations' functions. This co-location is expected to include computer based signalling locations, train control, security, customer information, fleet management, asset monitoring and incident response functions.

The transformation will deliver consistent, accurate, timely and up to date information to customers about delays and enable faster incident resolution and service recovery. It will provide the operational management of the Sydney Trains network with a highly coordinated customer focus and will support the realisation of benefits from future initiatives including major infrastructure programs, the Rail Futures Strategy and future business model changes.

2.3 ROC Program Delivery Structure

Given the complexity of the ROC Program a robust governance structure is required. The ROC Program has been set up with an organisational structure which aims to:

- Ensure appropriate oversight of the program's continual performance
- Enable effective and informed decision making from stakeholders outside of the delivery structure.

Program delivery has been organised into five streams, with overarching program management governance:

- Infrastructure - delivery of the physical building and its supporting infrastructure
- Technology - delivery of the four new core systems and integration into existing systems
- Transformation and Change - new ROC processes, people and organisational structures
- Solution Integration - program assurance and delivery of program benefits within acceptable risk tolerance
- Business Continuity & Program Testing - delivery of Business Continuity capability and Cross Stream Testing

The early phases of the technology program have been broken up as follows:

- High Level Design – A period of approximately five weeks commencing in early January 2015 in which two consortiums of vendor(s) worked with the ROC Program to develop parallel High Level Solution Designs (HLSD) and a BAFOs, among other deliverables

- Detailed Design – Following the parallel High Level Design Phase technology vendor(s) were down selected to participate in the Detailed Design Phase

2.4 ROC Technology Systems

The ROC 'day of operations' model will be supported by four new technology systems, integrated with each other and into the existing Sydney trains technology environment:

- 'Day of Operations' Train Timetabling System (DTTS) - Provides computerised support for monitoring services and managing service disruptions.
- Incident Management System (REM) - Provides computerised support for identification of incidents, assignment of priority, allocation of pre-planned workflows, tracking of progress, escalation and reporting.
- Customer Information Management System (CIMS) - Provides a single source of truth for customer information and the co-ordinated distribution of planned service details as well as service disruption information over multiple channels.
- Operational Visual Display System (OVDS) - Provides an integrated monitoring capability. It supports the creation of virtual walls containing the output from multiple source systems.

In addition to meeting the business needs and capabilities of the ROC, the new systems will also support international transport-based integration standards and allow for future expansion into computer based traffic management.

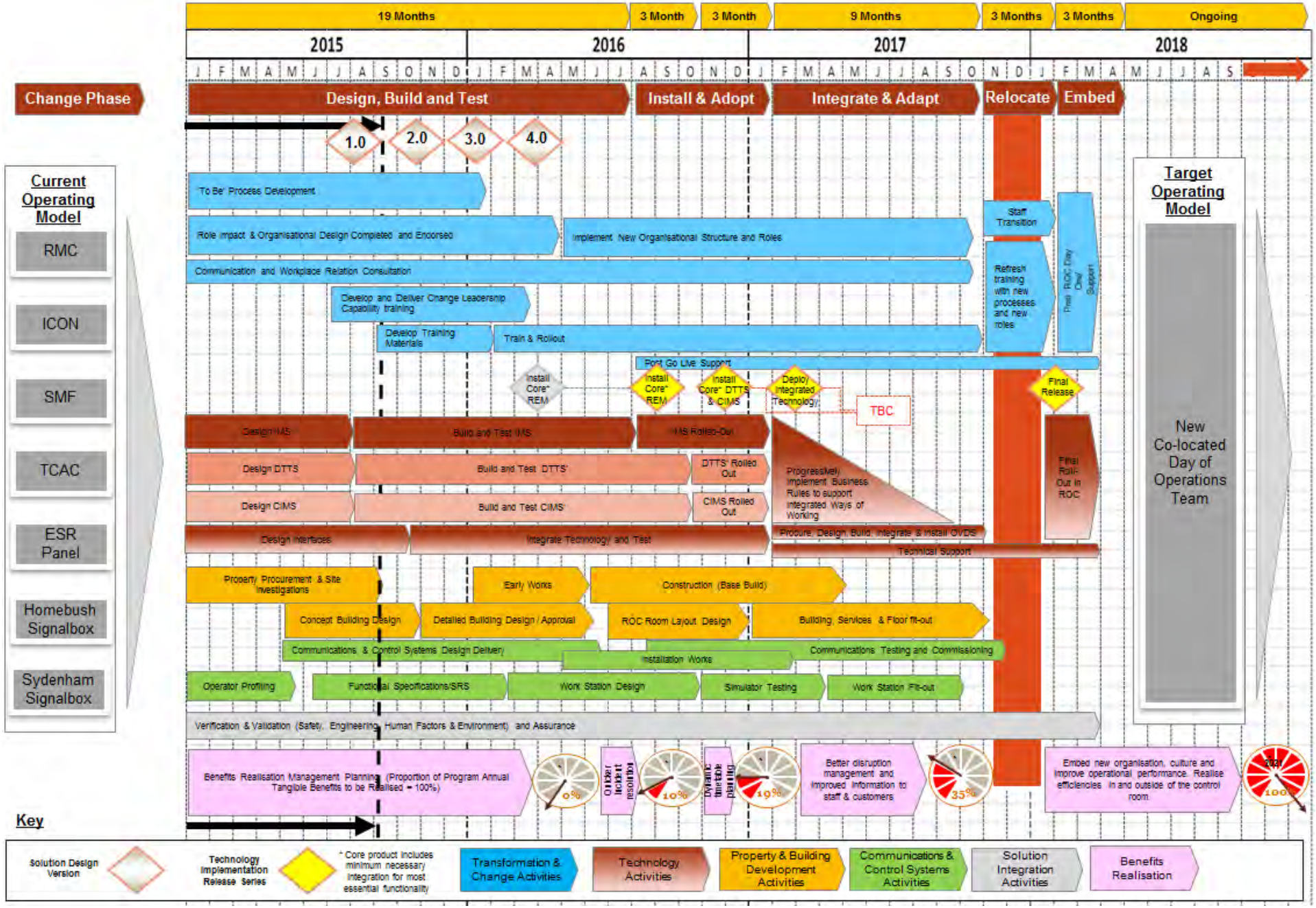
The first three of these four systems capabilities listed above are described as sub projects in the context of the ROC technology procurement process. These three sub projects and a Systems Integrator role formed the scope of the ROC Technology Request for Proposal (RfP).

2.5 ROC Program Principles

The following principles underpin the technology program design and implementation approach:

- The overarching philosophy of the technology program is to "Buy not Build" technology capability to meet the identified business needs
- New technology systems to be introduced will be 'off the shelf' to the extent that is practicable. i.e. configuration of Licensed Software, not changes to source code
- New technology business processes will be implemented as near to 'out of the box' as is practicable i.e. the existing business process will change to align with the processes that are provided with new systems
- The above principles apply provided there is no breach of regulatory requirements or internal policies
- New technologies will be implemented in a phased roll out which optimises the balance of technical risk, business benefit, the level and rate of impact on affected users
- The program will avoid a "big-bang" implementation
- The technology roll out can occur prior to the completion and transition of the business users into the new ROC facility, provided business benefits associated with the new technology can be realised

These Principles are reflected in the sample ROC Implementation Roadmap shown on the following page. The roadmap is expected to evolve over the life of the Program. An update to the roadmap will not necessarily trigger a reissue of the Program Test Management Framework.


19 Months
3 Month
3 Month
9 Months
3 Months
3 Months
Ongoing
2015
2016
2017
2018
Change Phase
Design, Build and Test
Install & Adopt
Integrate & Adapt
Relocate
Embed
1.0
2.0
3.0
4.0
Current Operating Model
RMC
ICON
SMF
TCAC
ESR Panel
Homebush Signalbox
Sydenham Signalbox
'To Be' Process Development
Role impact & Organisational Design Completed and Endorsed
Implement New Organisational Structure and Roles
Staff Transition
Communication and Workplace Relation Consultation
Refresh training with new processes and new roles
Develop and Deliver Change Leadership Capability training
Develop Training Materials
Train & Rollout
Post Go Live Support
Install Core* REM
Install Core* DTTS & CIMS
Deploy Integrated Technology
TBC
Final Release
Design IMS
Build and Test IMS
IMS Rollout
Design DTTS
Build and Test DTTS
DTTS Rolled Out
Design CIMS
Build and Test CIMS
CIMS Rolled Out
Progressively implement Business Rules to support Integrated Ways of Working
Final Roll-Out in ROC
Design Interfaces
Integrate Technology and Test
Procure, Design, Build, Integrate & Install OVDS
Technical Support
Property Procurement & Site Investigations
Early Works
Construction (Base Build)
Concept Building Design
Detailed Building Design / Approval
ROC Room Layout Design
Building, Services & Floor fit-out
Communications & Control Systems Design Deliver
Installation Works
Communications Testing and Commissioning
Operator Profiling
Functional Specifications/SRS
Work Station Design
Simulator Testing
Work Station Fit-out
Verification & Validation (Safety, Engineering, Human Factors & Environment) and Assurance
Benefits Realisation Management Planning (Proportion of Program Annual Tangible Benefits to be Realised = 100%)
0%
Driver ticket reduction
10%
Dynamic timetable planning
19%
Better disruption management and improved information to staff & customers
35%
Embed new organisation, culture and improve operational performance. Realise efficiencies in and outside of the control room
100%
Target Operating Model
New Co-located Day of Operations Team
Key
Solution Design Version
Technology Implementation Release Series
* Core product includes minimum necessary integration for most essential functionality
Transformation & Change Activities
Technology Activities
Property & Building Development Activities
Communications & Control Systems Activities
Solution Integration Activities
Benefits Realisation

2.6 ROC Program Releases

For early Program planning purposes the ROC Roadmap has the Program being delivered via four Releases:

Release	Timing	Description
Release 1	Late 2016	A new incident management system to help staff who work in supporting the moving or controlling of trains to communicate, collaborate and resolve incidents faster, providing a better service to customers. The system will facilitate the resolution of incidents in real time.
Release 2	Mid 2017	A new 'day of operations' timetabling system to support train controllers in planning to recover service from a disruption. A new customer information system to provide a single source of information for service line status and service alerts for all customer and staff channels, including mobile apps, websites, Station Passenger Information screens and Variable Message Screens.
Release 3	Late 2017	Incident management, timetable changes and customer information is fully integrated with existing systems and alerts. Incidents and timetable changes are linked to customer information providing real time information.
Release 4	First Half 2018	Progressively move business functions into new ROC building.

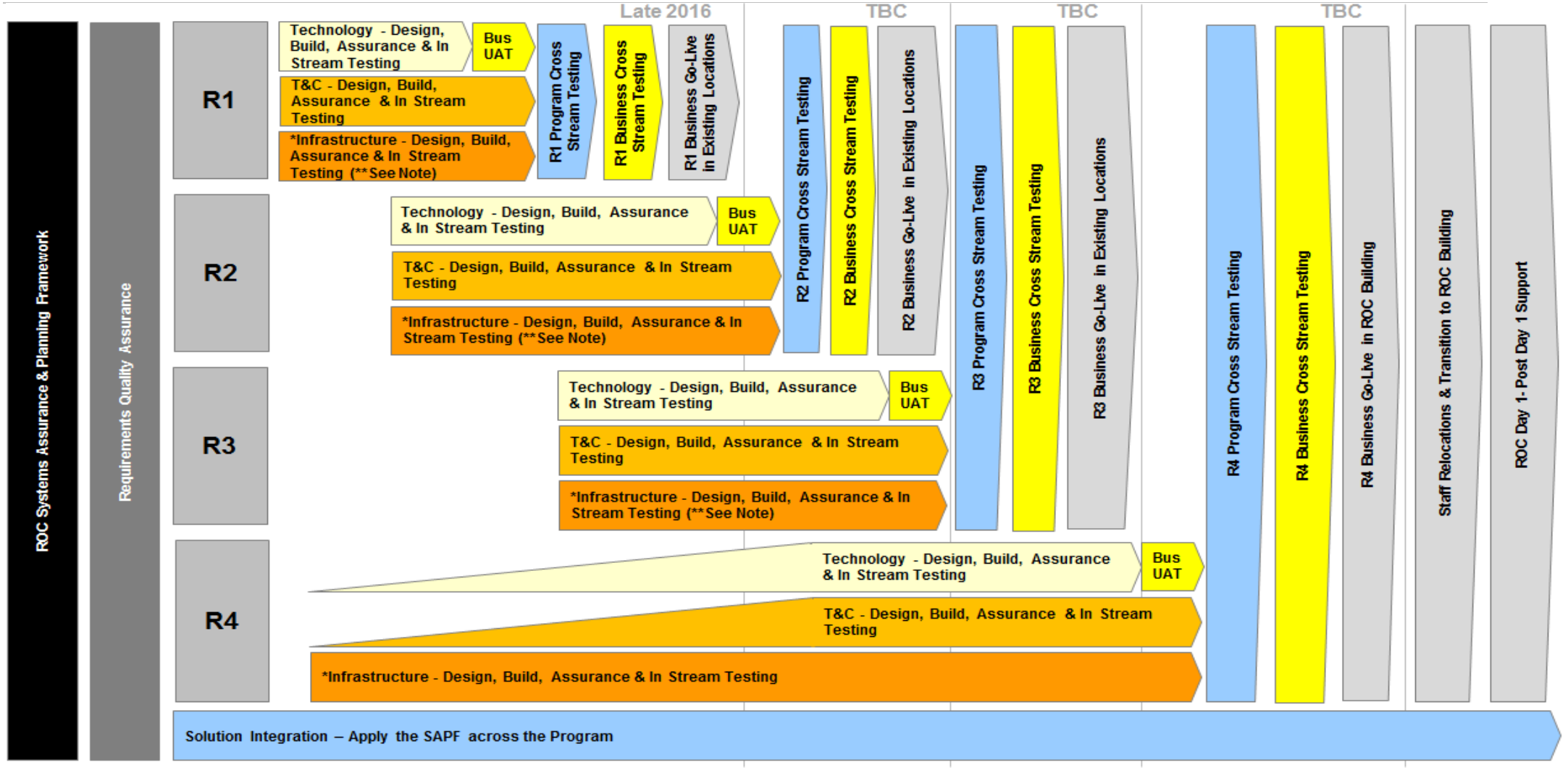
2.7 ROC Program Test Principles

To support the ROC Program principles, wherever possible the following test principles will be applied throughout the Program:

- ROC Testing should align to Program Schedule milestones and support the Program Implementation Strategy
- Solution components should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components
- Where solution components derived from requirements are tested, traceability of tests to requirements and test coverage of requirements should both be demonstrable
- Test phases will build on previous test phases to help assure the final solution delivered is safe, complete, correct and fit for purpose
- A risk based approach will be applied to testing. Test cases should be prioritised into essential, high, medium and low based on risk and be executed in priority order so far as it is feasible to do so
- For applicable test phases, Program testing should occur prior to business testing. Benefits of this approach include:
    - Using professional testers to identify defects prior to business testing will reduce business resource 'testing fatigue'
    - Build Program confidence prior to business exposure
    - Duration and iterations of business testing should be reduced
    - Business resources initial experience is positive
    - Positive word of mouth from Business testers back to their teams
- Any elements of the ROC solution(s) which are to be implemented into current operating locations should be 'Cross-Stream' tested to demonstrate the ROC solution including technology, processes, roles and infrastructure is safe, complete, correct and fit for purpose prior to implementation into business operations
- The ROC solution including technology, processes, roles and infrastructure should be 'Cross-Stream' tested from the new ROC building to demonstrate the solution is safe, complete, correct and fit for purpose prior to day one of operations
- Testing for each Release will conclude at the completion of Cross-Stream testing
- Any Business readiness activities conducted after Cross-Stream testing are not test phases. The intent of these activities will be to confirm business readiness rather than identify and resolve defects
- Program testing should include an approach to monitor and log variances in technology network performance between different sites (RMC, ICON, SMF, ROC Technology Test Lab, Belmore, ROC Building and Signal Boxes) which may adversely impact operational performance
- Test delivery should be planned so as to not compromise the organisation's ability to manage the 'day of operations'

These Principles should be applied to all major and minor releases delivered by the ROC Program as appropriate, are reflected in the ROC Program Test Management Framework Overview Diagram shown below and are referenced throughout this document.

ROC Program Test Management Framework



Stream deliverables to be designed, built, assured and/or tested include but may not be limited to:

Technology
- IMS
- DTTS
- CIMS
- OVDS
- Existing Application Changes
- Integration
- DR

Transformation & Change
- Current Processes
- Future Processes
- Interim/DR Processes
- IR/OD Strategy
- Role Definitions
- Workload Baselining & Assessment
- Procedures
- Work Instructions
- SME Training Dev & Delivery
- End User Technical Training Dev & Delivery
- End User Behavioural Training Dev & Delivery

Infrastructure
- Property
- Control Room Floor
- Support Spaces
- Facilities
- Control Systems
- Services
- Utilities
- DR

* In Stream Infrastructure testing will comply with Australian Standards, Sydney Trains &/or TfNSW Engineering specifications & processes in order to achieve required certification and /or regulatory compliance.
**Note – It remains to be seen whether the Infrastructure stream will deliver any solution components for R1, R2 or R3.

Business Continuity & Program Testing
- Program Test Management Framework
- Program BCP Strategy

Solution Integration
- Program Roadmap
- Program Safety Change Plan
- Program Requirements Integration Plan
- Program Integrated Configuration Plan
- Program Quality Assurance Plan

Note – Dates are based on draft v3 of the Program Roadmap, which may be subject to change

2.8 Stakeholder Resource Involvement

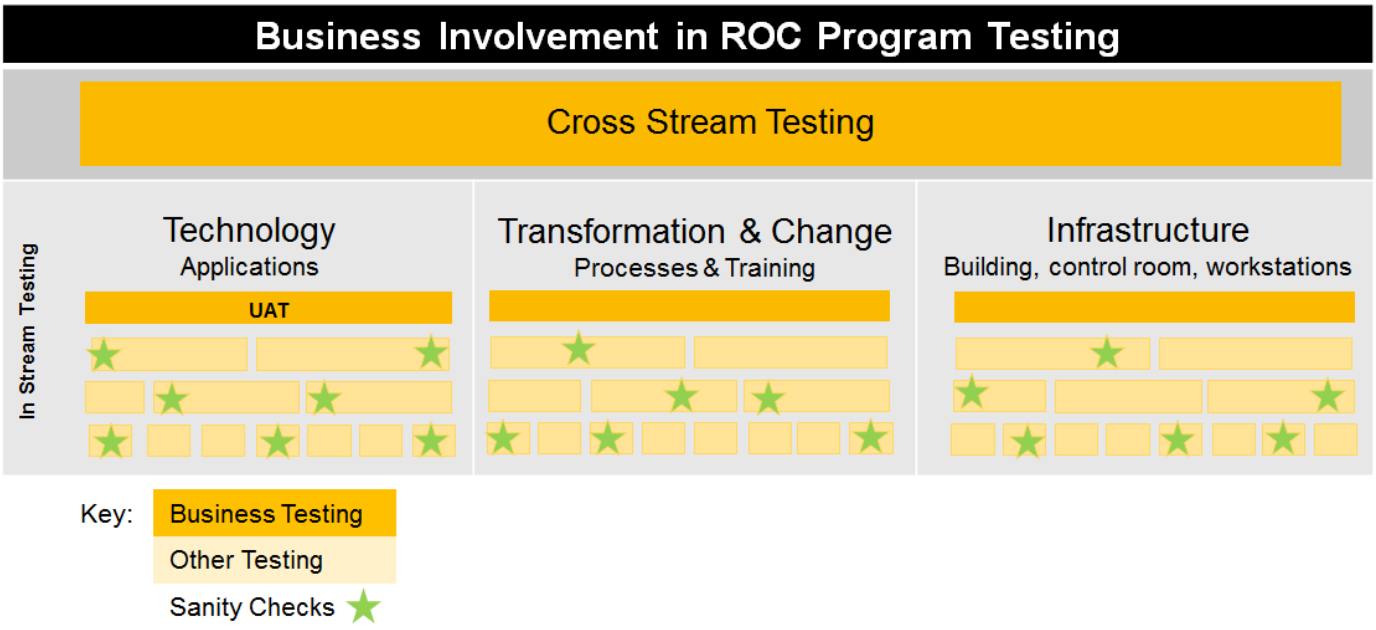
The testing of ROC Program solution components is expected to occur in layers in line with the ROC Program test principle restated below:

- Solution components should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components

From a testing perspective it is anticipated stakeholders will be involved in a number of ways including:

- Review and approval of Test Planning documentation and artefacts
- Informal engagement and involvement in sanity checking the proposed solution throughout design, build and testing
- Formal participation in User Acceptance Testing
- Formal participation in Cross Stream Testing

This participation is illustrated in the diagram below:



3 Background

3.1 ROC Program Systems Engineering Approach

The scope and complexity of the ROC Program creates a broad range of conditions and contexts each ROC stream will operate within. The Program has adopted a systems engineering approach to address this challenge, with each delivery stream applying lower level methodologies as appropriate:

- The Infrastructure stream has adopted a systems engineering framework.
- The Technology stream utilises a systems architecture based practice (PEFM), however this methodology is domain specific and additional linking concepts have had to be established to enable traceability between Technology systems architecture and other streams.
- The Transformation and Change and Program Management Office requirement sets are not typically expressed in architectural terms. To manage this disconnect, new concepts and interfaces have been established to represent the artefacts produced in these streams within an architectural framework that is compatible with their respective methodologies.

The overarching systems engineering approach will assure the validity and quality of the total ROC Solution and is currently reflected in:

- The ROC Component Model
- The ROC Service Delivery Design Blueprint
- The ROC Systems Assurance and Planning Framework

3.2 The ROC Component Model

The ROC solution can be thought of as an integrated set of components being developed and delivered by streams of the ROC Program. The solution, along with interfaces and dependencies between components are described within the ROC Solution Design.

As streams develop components of the solution they will maintain consistency with the broader ROC Solution by ensuring components accurately cross reference any dependent components from within their own stream or another stream.

The ROC Component Model is represented by Figure 1 on the following page and described in more detail within the ROC Service Delivery Design Blueprint.

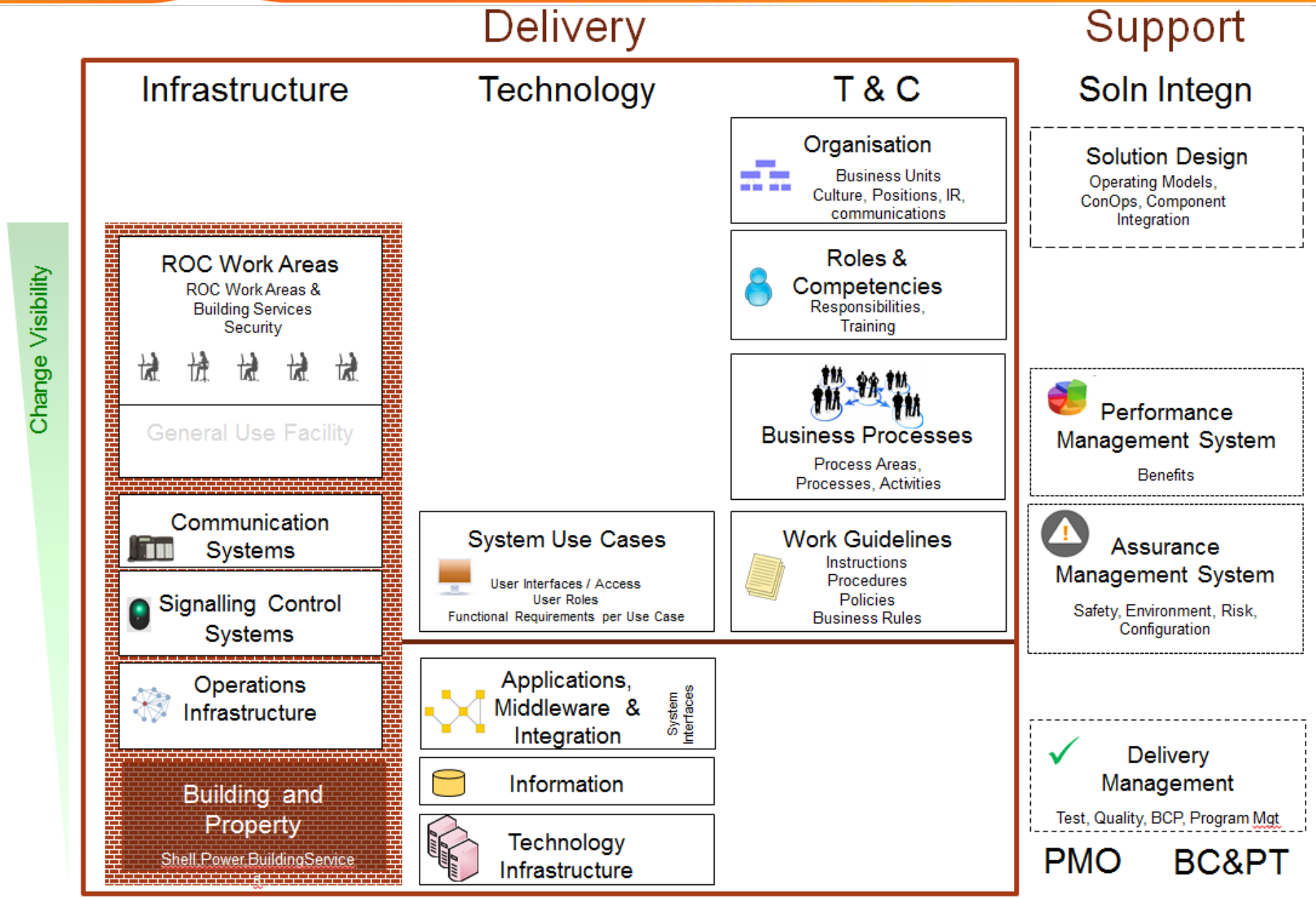

Delivery
Support
Infrastructure
Technology
T & C
Soln Integn
Change Visibility
ROC Work Areas
ROC Work Areas & Building Services Security
General Use Facility
Communication Systems
Signalling Control Systems
Operations Infrastructure
Building and Property
Shell.Power.BuildingService
System Use Cases
User Interfaces / Access
User Roles
Functional Requirements per Use Case
Applications, Middleware & Integration
System Interfaces
Information
Technology Infrastructure
Organisation
Business Units
Culture, Positions, IR, communications
Roles & Competencies
Responsibilities, Training
Business Processes
Process Areas, Processes, Activities
Work Guidelines
Instructions
Procedures
Policies
Business Rules
Solution Design
Operating Models, ConOps, Component Integration
Performance Management System
Benefits
Assurance Management System
Safety, Environment, Risk, Configuration
Delivery Management
Test, Quality, BCP, Program Mgt
PMO
BC&PT

Figure 1

3.3 The ROC Service Delivery Design Blueprint

The ROC Service Delivery Design Blueprint will define a detailed logical design of the targeted solution and end state.

It establishes a holistic architecture which includes references to the types of requirements and deliverables/components of each program stream, as well as the relationships and interfaces between them.

The blueprint can be used to logically test the end to end traceability and completeness of the ROC Solution. It provides assurance components both satisfy stream requirements and also support the integrity of the ROC Program Solution as a whole. The tool allows the ROC Program to monitor key dependencies and align program activities. The blueprint includes:

- Organisational structure - roles, positions, responsibilities, accountabilities, competencies and training
- Decision support requirements - system use cases, end user acceptance testing, overall fitness for purpose
- Infrastructure - control systems and facilities design
- Stakeholder communication and governance
- Compliance and safety, legislation, policy, procedures and work instructions
- Benefits realisation

Another key benefit of this holistic architecture is that it can enable logical testing of a range of different future state scenarios (e.g. performers playing new roles, using new business processes and systems, operating from new facilities).

The service delivery design blueprint may evolve throughout the Program lifecycle. The current version is represented by Figure 2 on the following page.

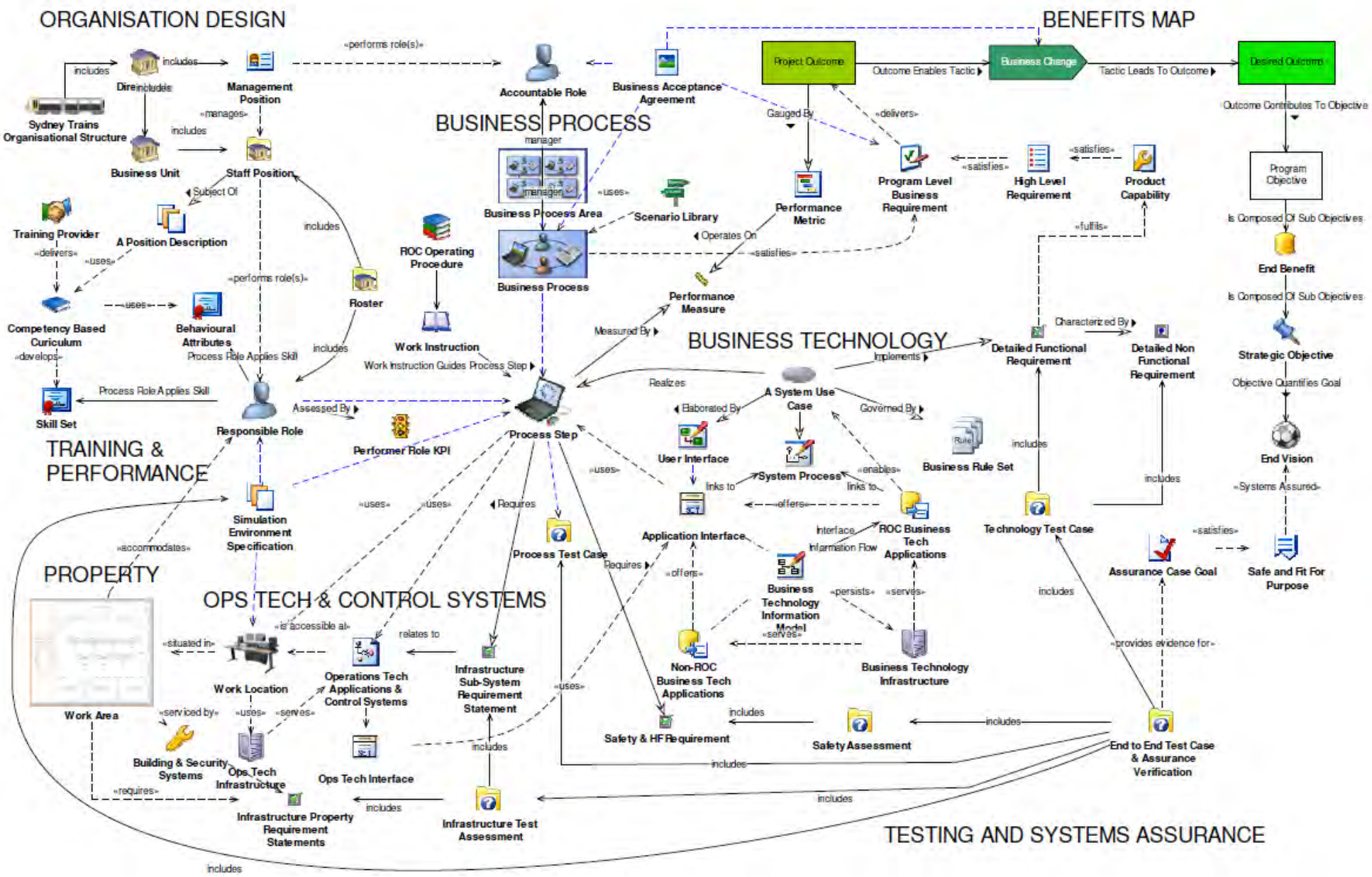

ORGANISATION DESIGN
BENEFITS MAP
BUSINESS PROCESS
BUSINESS TECHNOLOGY
TRAINING & PERFORMANCE
PROPERTY
OPS TECH & CONTROL SYSTEMS
TESTING AND SYSTEMS ASSURANCE
Sydney Trains Organisational Structure
Business Unit
Management Position
Staff Position
A Position Description
Training Provider
Competency Based Curiculum
Behavioural Attributes
Skill Set
Responsible Role
Roster
Simulation Environment Specification
Performer Role KPI
Accountable Role
Business Acceptance Agreement
Business Process Area
Business Process
Scenario Library
ROC Operating Procedure
Work Instruction
Performance Measure
Performance Metric
Process Step
Process Test Case
Project Outcome
Business Change
Desired Outcome
Program Level Business Requirement
High Level Requirement
Product Capability
Program Objective
End Benefit
Strategic Objective
End Vision
Safe and Fit For Purpose
Assurance Case Goal
Detailed Functional Requirement
Detailed Non Functional Requirement
A System Use Case
User Interface
System Process
Business Rule Set
Application Interface
ROC Business Tech Applications
Technology Test Case
Business Technology Information Model
Business Technology Infrastructure
Non-ROC Business Tech Applications
Work Location
Work Area
Operations Tech Applications & Control Systems
Infrastructure Sub-System Requirement Statement
Ops Tech Infrastructure
Ops Tech Interface
Building & Security Systems
Infrastructure Property Requirement Statements
Infrastructure Test Assessment
Safety & HF Requirement
Safety Assessment
End to End Test Case & Assurance Verification
includes
«performs role(s)»
«manages»
Subject Of
«delivers»
«uses»
Process Role Applies Skill
Assessed By
Work Instruction Guides Process Step
Measured By
Realizes
Implements
Characterized By
Elaborated By
Governed By
«enables»
Links to
«offers»
Interface
Information Flow
«persists»
«serves»
Requires
«accommodates»
«is accessible at»
«situated in»
relates to
«serviced by»
«requires»
Gauged By
Operates On
«satisfies»
«fulfils»
Outcome Enables Tactic
Tactic Leads To Outcome
Outcome Contributes To Objective
Is Composed Of Sub Objectives
Objective Quantifies Goal
«Systems Assured»
«provides evidence for»

Figure 2

3.4 The ROC Systems Assurance and Planning Framework

While the ROC Service Delivery Design Blueprint gives the Program a detailed conceptual picture of the overall solution and targeted end state, the ROC Systems Assurance and Planning Framework (SAPF) informs the Program as to how the blueprint will be implemented.

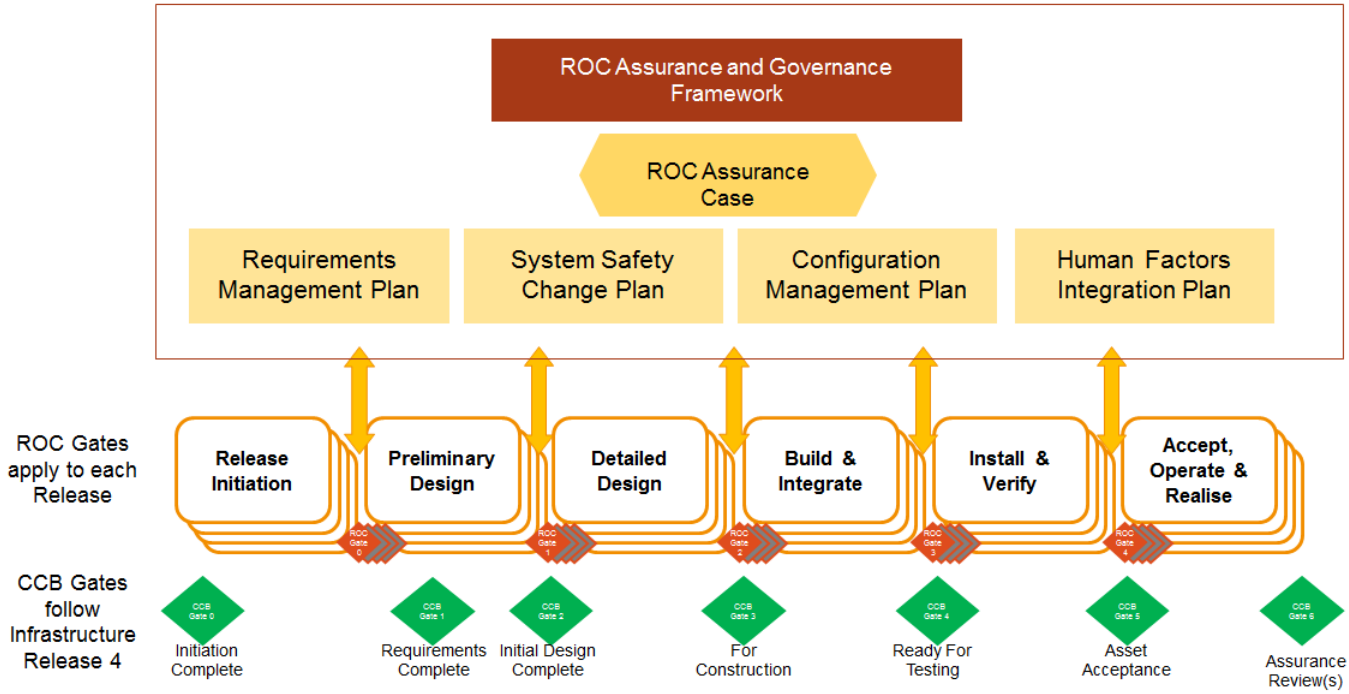
The SAPF is made up of a number of plans including:

- Assurance & Governance Plan
- Requirements Management Plan (RMP)
- Configuration Management Plan (CMP)
- System Safety (Safety Change) Plan
- Human Factors Integration Plan

The SAPF will provide the framework around systems assurance and planning for the ROC Program, helping ensure delivery of the blueprint is compatible with the needs of Program requirements traceability management.

The framework may also include any other plans which will enable the ROC Program to demonstrate assurance to governance bodies and acceptance authorities. Two additional documents which will be produced to supplement the SAPF are the ROC Program Verification & Validation Plan and the ROC Program Test Management Framework (this document).

A conceptual diagram which represents the current, agreed version of the SAPF is presented below.



3.5 ROC Program Phases and Gates

To deliver an integrated Program the ROC will need to blend traditional program management approaches with the following assurance approaches:

- Transport ASA CMAAC gates for Asset Integrity
- Sydney Trains Engineering and System Integrity CCB Hierarchy
- PMLC / PEFM
- Finance Approvals Process
- Managing Successful Programs / Prince2
- The Open Group architecture development method (TOGAF)
- Defence Capability Development (MODAF,DODAF,AUSDAF)

The ROC Program is proposing a set of consistent Phases and Gates which align with external compliance gates as outlined in the diagram below:

Program Delivery Phases & Indicative Deliverables

Program Establishment	Business Case, Business Requirements Specification, Concept of Operations, Current/Future Processes L1-3, Business Changes, Benefits [CMAAC 0]
Program Initiation	System Capabilities (High Level Requirements), Infrastructure SRS, Major System Option Evaluations (vendor qualification), Infrastructure Options, Roadmap / Release Strategy, Systems Assurance Plan, Assurance Case, Current Processes L1-4 [CMAAC 1]

Per Release

Release Initiation	Establish Release Strategy, High Level Scope and Assumptions, Establish Release Working Group
ROC Gate 0	
Preliminary Design	Release specific scope: business requirements (in scope), high level requirements (in scope), IT architecture design, current processes in scope, organisation, infrastructure elements, assurance case level 1-3 Design: Future state process patterns, organisation design principles Detailed design plans for all detail design artefacts
ROC Gate 1	
Detailed Design	Developing detailed requirements & design to build: functional reqs, system use cases, interfaces, architectures, sub system SRS, architect designs, future state process level 4, org design & change plan, role definitions, positions, competencies, test scenarios, assurance case L4, assurance scenarios Detailed plans for all Build & Integrate artefacts including training plan, test plan…
ROC Gate 2	
Build & Integrate	Build and integrate systems, build human performance capability, build facilities Position definitions, establishment, IR, Procedure writing, Provide training to build competency, Workflow config, Unit, System, Integrated, test Detailed plans for all Install & Verify artefacts including E2E test verification, safety assurance verification…
ROC Gate 3	
Install & Verify	Capabilities are available in the live environment (including DR and BCP) but are not in use Final verification and assurance, acceptance by external compliance stakeholders
ROC Gate 4	
Accept, Operate & Realise	Business accepts into service, operational usage commences - people performing new jobs, major systems being used, hand off to BAU, cumulative performance and benefits tracking

Program Close	Conclude benefits tracking, full BAU hand over for operations and maintenance

3.6 ROC Program Verification & Validation

Verification and Validation (V&V) will be applied across a number of ROC Program deliverables. In the context of the SAPF and the ROC Program V&V Plan, there will be many methods by which the Program will assure the quality of deliverables including:

- Documentation review and sign off
- Engineering certification
- Regulatory and legislative compliance
- Various types of testing and test phases
- Combinations of the assurance methods listed above

In the context of the wider Systems Engineering approach, ROC Program testing will be one method by which the Program will:

- Assure the solution and end state delivered are safe, complete, correct and fit for purpose
- Assure Sydney Trains is adequately prepared for the implementation of the solution (or elements of the solution) into business operations

The focus of the ROC Program Test Management Framework is the sub-set of Program deliverables which will be assured by testing.

The ROC Program V&V Plan will:

- Reflect the stream deliverables to be assured in line with the SAPF
- Propose the method by which each deliverable will be assured

Just as the SAPF overarches the ROC Program V&V Plan, the Program Test Management Framework overarches In-Stream and Cross-Stream testing. Where a deliverable is to be assured by testing, it is expected the types of test planning documentation illustrated in the table below will be produced.

ROC System Assurance & Planning Framework		
ROC Program Verification & Validation Plan		
ROC Program Test Management Framework		
Technology Test Strategy	At the time of writing no T&C deliverables have been identified which will be assured by in-stream testing	Infrastructure Test Strategy
Technology Release Test Plans		Infrastructure Sub-Stream Test Plans
Technology Detailed Test Plans		Infrastructure Detailed Test Plans
Technology Test Summary Reports		Infrastructure Test Results
Technology Test Artefacts		Infrastructure Test Artefacts
Cross Stream Test Strategy		
Cross Stream Detailed Test Plans		
Cross Stream Test Summary Reports		
Cross Stream Test Artefacts		

3.7 Test Documentation and Artefact Deliverables

Further to this Program Test Management Framework, for deliverables which will be assured by testing it is expected the following types of documentation and artefacts may be produced:

Deliverable	Deliverable Description	Deliverable Type & Approval Method
Test Strategy	Test Strategy documents apply to the Program and should align to the Program Test Management Framework. The strategy details the overall testing scope, approach, tools, environments, test management procedures, metrics, roles, responsibilities and schedule for test phases to be delivered by each stream. These elements should combine to outline a test strategy which will provide objective evidence the new or changed service meets stakeholder requirements.	Document - Review & Approval
Master Test Plan (MTP)	Master Test Plans apply to a Release and should align to the Program Test Management Framework and the Test Strategy. For each Release the Master Test Plan details the testing scope, approach, tools, environments, metrics, roles, responsibilities and schedule for test phases to be delivered by each stream.	Document - Review & Approval
Detailed Test Plans (DTP)	DTP's should be produced for each test phase and align to the Test Strategy and Master Test Plan. They provide details around the schedule, scope, approach and technical considerations. The DTP identifies resource requirements, communicates roles and responsibilities and articulates the time frames tasks need to be performed within. Any deviation from the Test Strategy or MTP should be highlighted in the DTP.	Document - Review & Approval
Test Objectives Matrix (TOM)	Test objectives can be derived from the business, functional and/or system requirements depending on the test phase. Test Objectives must be mapped to Requirements Traceability Matrix (RTM) for traceability and to demonstrate coverage of requirements. The Test objectives describe "what is to be tested".	Document - Review & Approval
Test Cases	The scenarios to be executed during testing. Test cases are derived from and should cover of the test objectives, including both positive and negative scenarios. Test cases include details around 'how' the testing will be executed in order to meet the test objective(s). They should be written at a level that takes into account the experience of the tester and the risk level of the test. Existing artefacts should be leveraged wherever possible when preparing test cases.	Document - Review & Approval
Test Results	Specific test results, like screenshots, application reports & logs required in order to verify the execution outcome of a test case. Test results will be produced for each test case executed and be stored in HP ALM, including pass/fail status.	Artefact – Approved via Review & Approval of the TSR
Defects	Each defect identified during testing will be documented in the HP ALM defect Management system, where progress and resolution will be tracked.	Artefact – Approved via Review & Approval of the TSR
Periodic Status Reports	Regular reports which outline test status, progress, major issues, resource issues and any schedule impacts. The test statistics and analysis support daily management and evaluation of test status and corrective action where required in order to meet milestone delivery dates.	Artefact –Review & Approval not required
Test Summary Report (TSR)	A report produced at the conclusion of a test phase to summarise test results measured against the test exit criteria for the test phase.	Document - Review & Approval
Automation Test Suites	Suite(s) of automation test scripts. Creation commences during System Integration Testing for reuse in subsequent integration test phases	Artefact – Approved via Review & Approval

4 Document Information

4.1 Document Evolution

In January 2015 representatives from within the ROC Program agreed an interim version of this document (v1.0) was fit to inform technology vendor(s) participating in the High Level Design Phase of the Program. It provided an early, high level view of the test framework which will be applied to the ROC Program. Vendor(s) required a clear understanding of their responsibilities in relation to testing in order to produce a Best and Final Offer (BAFO) early in 2015. The BAFO was one of a number of deliverables vendor(s) produced during High Level Design and was an important input in the context of Sydney Trains technology vendor evaluation and selection criteria.

This next iteration has been produced to:

- Reflect the evolution in thinking related to the Program Test Management Framework between January 2015 and January 2016
- Align with ROC Release 1, Gate 2 deliverables
- For internal and external Program stakeholder review and approval to provide an agreed Program baseline

This document may need to be updated within the lifecycle of the ROC Program if thinking around the Program Test Management Framework evolves in a material way. An outline of the evolution the document has been through and may go through in the future is outlined below:

- V0.1 – First draft internally reviewed by the ROC Program team
- V1.0 – Document updated with feedback from the review of v0.1. Agreed interim version was issued to inform technology vendors at the commencement of the program High Level Design Phase
- V1.1 – Document updated for Release 1, Gate 2 milestone and internally reviewed by the ROC Program team
- V1.2 - Document updated with feedback from the review of v1.1 and distributed for internal Program endorsement
- V1.3 - Document distributed for external stakeholder review
- V2.0 – Document updated with feedback from external stakeholder review and distributed for endorsement/approval by internal and external Program stakeholders to provide an agreed baseline

This approved baseline would then be subject to change control. If thinking around the Program Test Management Framework evolves in a material way as the program moves through the Design and Delivery Phases, further iterations of this document may be produced for review and approval.

If updates are required, a new version of the document will be formally issued to stakeholders both internal and external to the ROC Program for review and feedback. The document would then be updated based on feedback from the review and reissued for formal sign off to provide a new agreed baseline. At any point in time the approved ROC Program Test Management Framework should serve as a reference for subsequent, more detailed testing documentation which will be produced by the Program.

4.2 Document Purpose

This document provides a high level view of the in-stream testing to be performed within each Program delivery stream. It also outlines how these tested components will be brought together for cross-stream testing to verify the E2E ROC solution at a Program level.

Producing the second iteration of this document for the Release 1, Gate 2 milestone limits the level of detail which can be included as the following types of information may not be fully defined:

- Implementation and Support Contracts with selected technology vendor(s)
- Outputs of the Program Detailed Design phase(s)
- Data Architecture
- ROC Program BCP Strategy
- Program Implementation Plans and Release Management Strategy
- Program Test Environment Management Plan

Despite these limitations, there are a number of benefits in developing a second iteration of the Program Test Management Framework for Release 1, Gate 2 including:

- Providing Program stakeholders with an early, high level view of how ROC Program components will be tested in order to gain high level agreement around the Program Test Management Framework
- Establish an agreed framework around test approach, language and guidelines upon which subsequent, more detailed testing documentation will be based
- Define test management and governance procedures and controls for the ROC Program

Given the different disciplines in play across the ROC Program it is unlikely a ‘one size fits all’ approach to testing will be appropriate. It is not the intention of this document to be prescriptive or mandate a specific approach across the entire Program. This framework should be applied to Program Testing where it is appropriate to do so. Accepted approaches from different domains and disciplines can be integrated into this framework as required.

Note - In the event of any inconsistencies between this document and the contract(s) with Program vendor(s), the terms of the contract(s) shall prevail to the extent of the inconsistency.

4.3 Document Scope

This document will provide a high level view of the testing required in order to gain acceptance to implement Releases of the ROC Program solution into Business operations.

Required activities which occur as part of the implementation/deployment process or post operational go-live will be within the scope of the ROC Program, but outside the scope of this document. Examples include:

- Post Implementation Verification (PIV) is an activity undertaken as a step in the Production Implementation Plan to verify technology system(s) have been successfully deployed to the Production environment, are ready for business operations to ‘go-live’ and deployment roll back is not required. PIV will be detailed within implementation documentation
- Handover and acceptance of technology application maintenance and support to Team(s) within Sydney Trains

4.4 Intended Audience

The ROC Program Test Management Framework has a broad audience including:

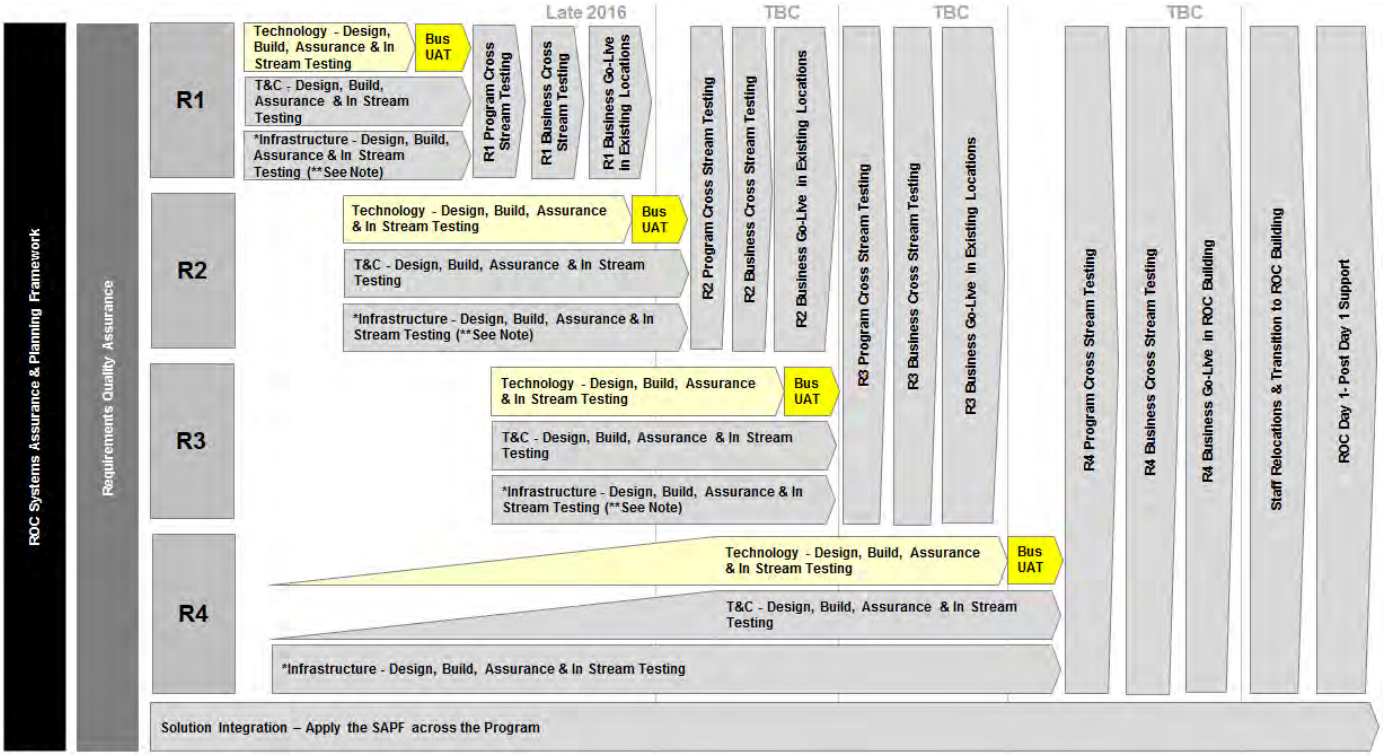
- The ROC Program Team
- ROC Program vendor(s)
- Impacted areas and stakeholders within Sydney Trains
- Impacted areas and stakeholders outside Sydney Trains
- Interdependent Programs

This audience and their respective roles and responsibilities are outlined in the 'Document Approvals, Endorsement and Distribution' section of this document.

5 In-Stream Technology Testing

In-stream testing refers to the testing performed on the solution components of a single ROC Program delivery stream.

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Technology testing refers to the areas indicated below:



The ROC Technology Stream went to market with an RfP to deliver four sub-projects:

- SP1 – Day of Operations Train Timetabling System (DTTS)
- SP2 – Incident Management System (REM)
- SP3 – Customer Information Management System (CIMS)
- SP4 – Systems Integrator

In addition, the Technology Stream will also deliver:

- Operational Visual Display System (OVDS)
- Changes to existing Sydney Trains applications

Some of the Systems Integrator early documentation deliverables include:

- ROC Technology Test Strategy - An overview of the testing which will be applied to new technology systems and changes to existing systems, including the quality target metrics technology deliverables will be measured against.
- ROC Technology Environment Management Strategy (TEMS) - The non-Production environments required to support the Test Strategy and deliver the Program, including how the environments are to be managed.
- System Test Plans - Testing which is to be applied to new technology systems and changes to existing systems up to and including System Acceptance Testing.

For early Program planning purposes the ROC Roadmap has the Program being delivered via four Releases. It is anticipated each technology system/change delivered will progress through the test phases listed below, which are detailed further within Appendix B of this document.

- Shakedown Testing
- Unit Testing (UT)
- System Testing (ST)
- System Acceptance Testing (SAT)
- System Integration Testing (SIT)
- Load & Performance Testing (L&P)
- Security & Penetration Testing (S&P)
- Automated Regression Testing
- Program User Acceptance Testing
- Business User Acceptance Testing

To ensure the integrity of component being tested, in conjunction with each test phase it is also expected an appropriate level of regression testing will be performed.

This approach will need to be ratified during the program Detailed Design Phase(s), then reflected in the ROC Technology Test Strategy document and subsequent Technology test planning documentation and artefacts.

The ROC Program will seek to produce consistent technology testing related documentation deliverables, particularly when these deliverables are to be reviewed by stakeholders outside of the Program. Sydney Trains/ROC Program templates should be used as a benchmark, be modified as little as possible and by mutual agreement.

Technology In-Stream testing and assurance will include formal business acceptance of Technology Stream components. On a Release by Release basis, assured technology components will be brought together with assured components from the T&C and Infrastructure Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the Technology, T&C and Infrastructure Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

5.1 Technology In-Stream Testing – Release 4

The early and gradual ramp up of Technology In-Stream Assurance and Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new technology solutions into existing locations. As these new technologies will transition into the ROC facility once it has been built, the Technology Stream is in fact delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3.

Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the Technology

Stream to validate infrastructure designs against Technology components for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

5.2 Configurable Off the Shelf (COTS) Products and Defects

The ROC Program principles which underpin the technology design and implementation approach are restated below:

- The overarching philosophy of the technology program is to “Buy not Build” technology capability to meet the identified business needs
- New technology systems to be introduced will be ‘off the shelf’ to the extent that is practicable. i.e. configuration of Licensed Software, not changes to source code
- New technology business processes will be implemented as near to ‘out of the box’ as is practicable i.e. the existing business process will change to align with the processes that are provided with new systems
- The above principles apply provided there is no breach of regulatory requirements or internal policies

In response to these principles, the Program’s technology RfP sought to identify products which could deliver the required functionality via configuration of COTS products without the need to customise the base products. Despite this, the risk remains detailed design, build and testing could identify required functionality which can only be delivered via a change to the underlying COTS products. Given the lead time required to change the base product can be much greater than the time required to change product configuration, this represents a potential risk to the Program schedule.

The Program Test Management tool will be set up to clearly differentiate between:

- Defects which can be resolved via changes to product configuration
- Defects which need to be resolved via a change to the underlying COTS product

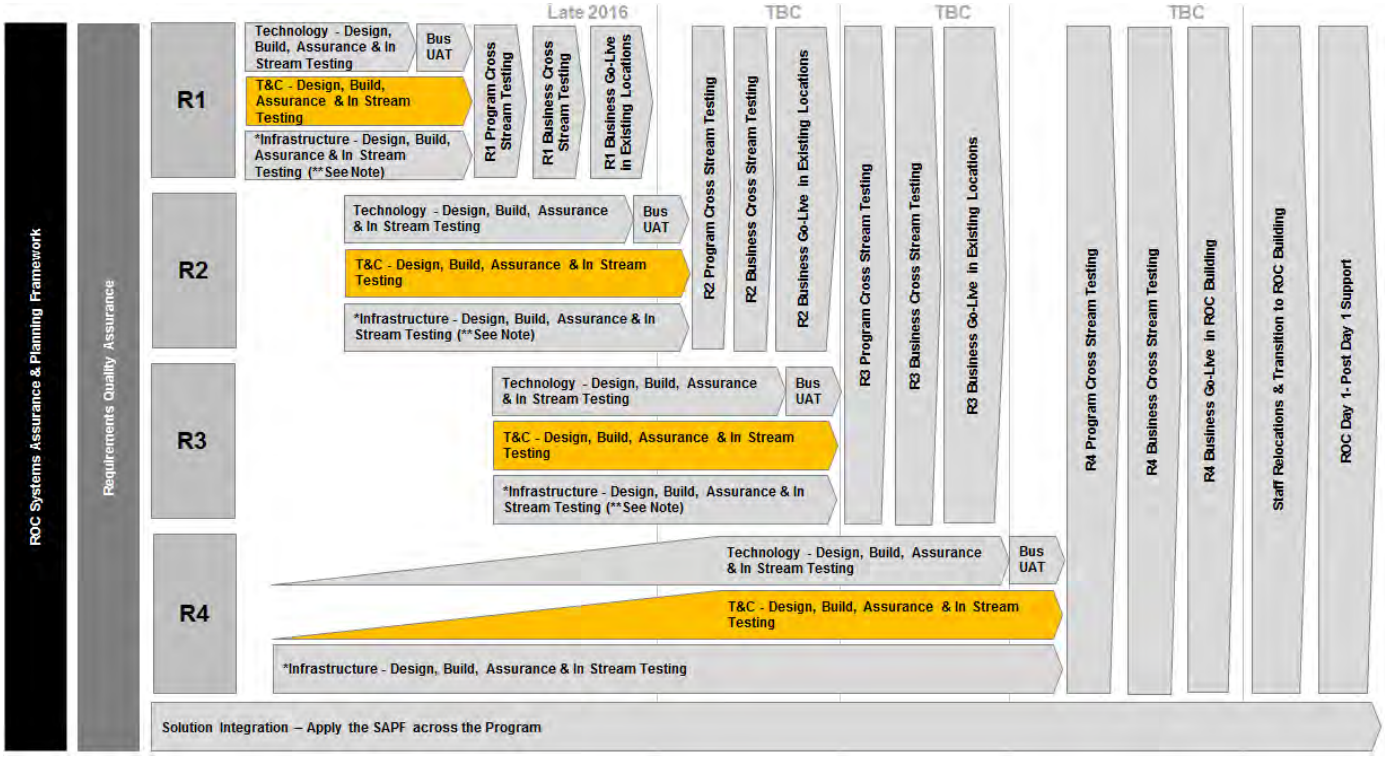
While the ROC Program may raise, track and manage both types of defects in HP ALM, fixes for the latter are expected to be delivered via product vendor roadmap(s) and internal processes. These activities would be cross referenced and tracked in HP ALM.

5.3 Enterprise Release Management

Within Sydney Trains, technology changes being delivered to the Production environment fall under Enterprise Release Management (ERM), which co-ordinates the scope of Enterprise Releases, impact assessments and gates Release content. One of the gates changes must pass through is the Change Approval Board (CAB), which provides the final approval required prior to Production deployment. It is anticipated ROC driven technology changes including both new systems and changes to existing applications will fall under ERM and require CAB approval prior to being deployed to Production.

6 In-Stream Transformation and Change Testing

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Transformation and Change (T&C) testing refers to the areas indicated below:



The T&C Stream solution components which are expected to require a level of assurance include:

- Current Processes & Future Processes
- Interim/BCP Processes
- IR/OD Strategy
- Role Definitions
- Workload Baselining & Assessment
- Procedures
- Work Instructions
- SME Training Dev & Delivery
- End User Technical Training Dev & Delivery
- End User Behavioural Training Dev & Delivery

Under the SAPF, the T&C Stream will develop an assurance strategy and plan(s) which will articulate the method by which each of these components will be assured.

On a Release by Release basis, the following T&C components will be used to verify technology systems delivered meet business requirements by testing the technology within the context of business processes and roles.

- Role Definitions
- Future Processes
- Procedures
- Work Instructions

As such, these T&C components will form the basis of Technology UAT scenarios and will need to be adequately assured within the T&C Stream to ensure they are mature enough to be relied upon as inputs to Technology UAT design.

T&C In-Stream testing and assurance will include formal business acceptance of T&C Stream components. On a Release by Release basis, assured T&C components will be brought together with assured components from the Technology and Infrastructure Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the T&C, Technology and Infrastructure Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

6.1 T&C In-Stream Testing – Release 4

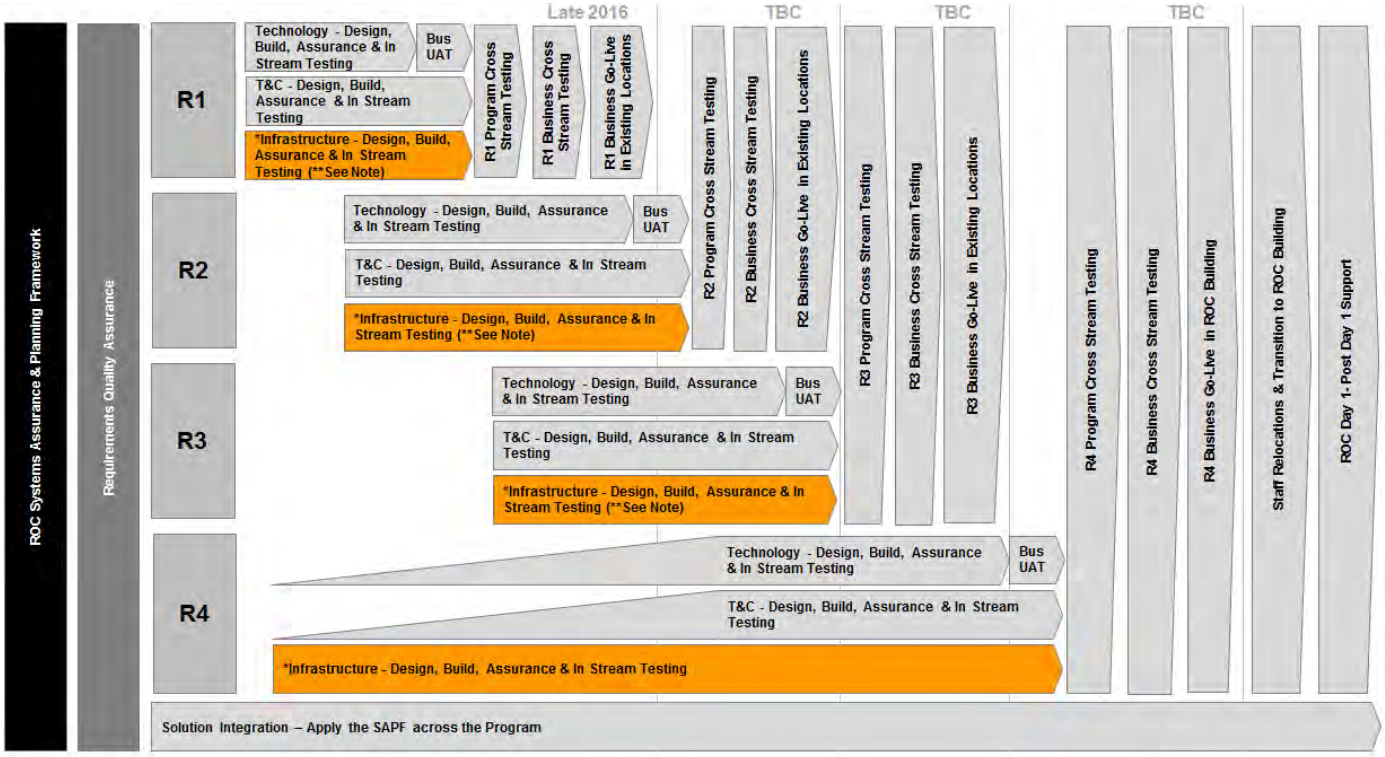
The early and gradual ramp up of T&C In-Stream Assurance and Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new processes and ways of working into existing locations. As these new ways of working will transition into the ROC facility once it has been built, the T&C Stream is in fact delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3.

Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the T&C Stream to validate infrastructure designs against T&C components for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

7 In-Stream Infrastructure Testing

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Infrastructure testing refers to the areas indicated below:



The ROC Program Infrastructure Stream has been structured into three sub-streams being:

- Operational Technology Systems
- Signalling Control Systems
- Property, including Security, Architecture, Building Shell and Building Systems

While the primary focus of the Infrastructure Stream will be delivery of the new building and the systems which reside within it, there may also be Infrastructure components delivered as part of Releases 1, 2 & 3.

Each Infrastructure sub-stream is expected to produce a number of components which will require testing and assurance. Under the SAPF, the Infrastructure Stream has developed an Infrastructure Assurance Plan (IAP), which articulates the method by which each of these components will be assured.

Where In-stream testing of Infrastructure components is required, it will be undertaken as part of the commissioning and testing processes which will be carried out by the ROC Infrastructure delivery stream. These processes must comply with Australian Standards, Sydney Trains and/or TfNSW Engineering Specifications and achieve required certification(s) and/or demonstrate regulatory compliance as required.

Infrastructure In-Stream testing and assurance will include formal business acceptance of Infrastructure Stream components. On a Release by Release basis, assured Infrastructure components will be brought together with assured components from the Technology and T&C Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the Infrastructure, T&C and Technology Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

7.1 Infrastructure In-Stream Testing – Release 4

The early and gradual ramp up of Technology and T&C Assurance and In-Stream Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new technology solutions and new ways of working into existing locations. As these new technologies and ways of working will transition into the ROC facility once it has been built, is the Technology and T&C Streams will in fact be delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3. As such, the solutions implemented in these earlier Releases will inform the design of the new facility.

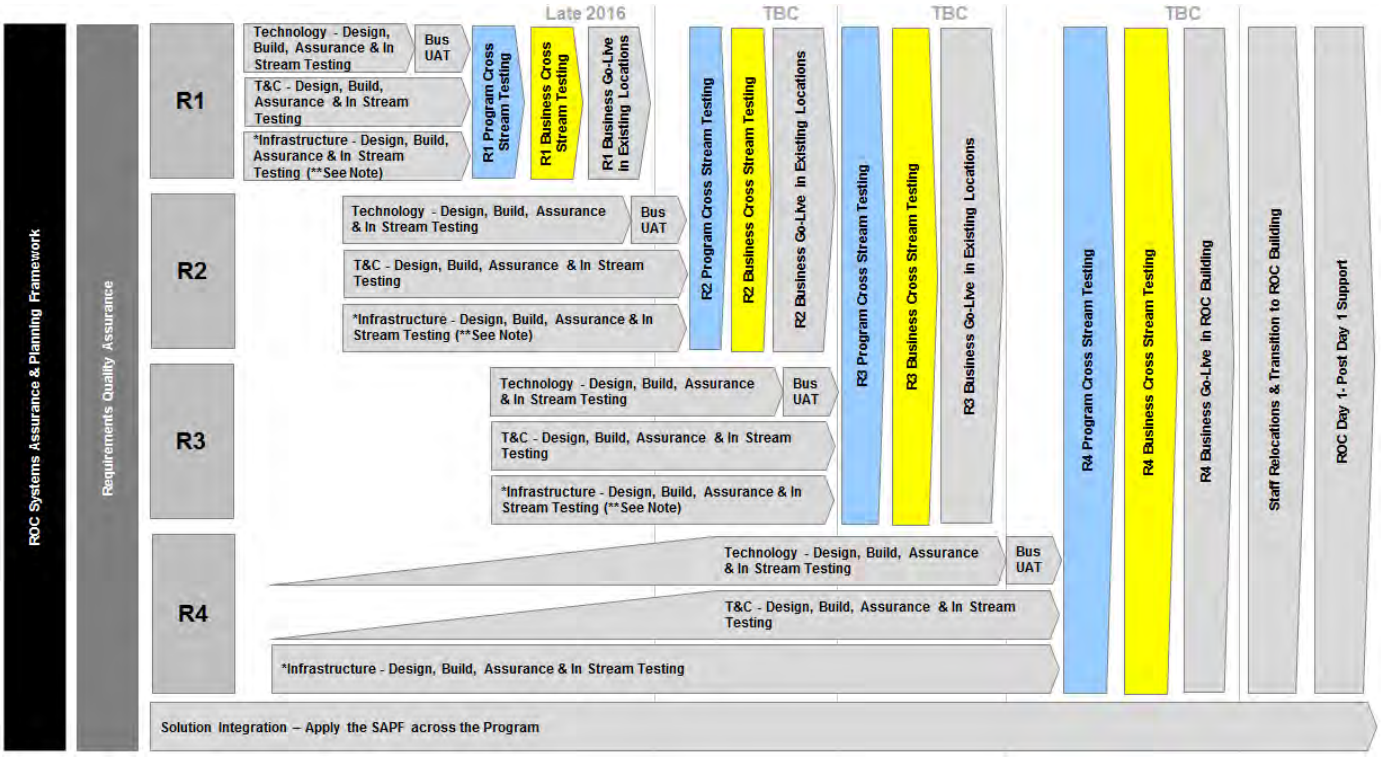
Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the Technology and T&C Streams to validate infrastructure designs against the components of these streams for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

8 Cross-Stream Testing

Cross-Stream testing refers to the integrated testing performed across components from more than one ROC Program stream.

The Business Continuity & Program Testing stream will lead all Cross-Stream test phases on behalf of the ROC Program. Program streams, Portfolio Teams and vendor(s) will be expected to support Cross-Stream testing and specifically support any of their components being tested.

In the context of the ROC Program Test Management Framework Overview Diagram, cross-stream testing refers to the areas indicated below:



8.1 Cross-Stream Testing

Test Phase Definition:	Cross-Stream Testing will provide an opportunity to simulate 'new ways of working' as realistically as possible up to and including the boundaries and touch points with existing, unchanged Business processes. This will involve testers acting in new roles, using new business processes, technology and infrastructure to exercise the ROC solution. Components of the solution can be refined and scenarios re-run as required to demonstrate the solution provides the business with a safe, workable and robust way to manage operations which is also compliant with Human Factors requirements. In-Stream assurance and testing provides risk mitigation against defects being identified during Cross-Stream Testing. This is important given the resources, effort and logistics required to run Cross-Stream Testing scenarios are expected to be significant and the lead times to deliver certain defect fixes into Cross-Stream Testing will be considerable. A small subset of ROC processes will be identified and agreed to be the Cross-Stream test scenarios for each Release based on criteria of business criticality, frequency of use, risk and functional coverage. A ROC test principle states program testing should occur prior to business testing. Program test resources will execute Program Cross-Stream Test scenarios in order to identify and resolve defects prior to Business Cross-Stream Testing. Benefits of this approach include: • Use of professional test resources to save Business resources from 'testing fatigue' • Build program confidence prior to business exposure Business resources will then execute Business Cross-Stream Testing. Benefits of this approach include: • Duration, iterations and defects greatly reduced by program testing • Business resources initial experience with the ROC solution is positive • Positive word of mouth from business testers back to their teams The success of this approach can be measured by analysis of defects identified during Cross-Stream Testing. If defects which could have been identified and resolved during In-Stream testing and assurance are found during Cross-Stream Testing we would conclude In-Stream testing and assurance activities could have been more effective. If this is the case, further analysis should be conducted to determine how these activities can be improved for future Releases. If Cross-Stream Testing identifies and resolves the types of defects which can only be identified by bringing together the components of ROC Program streams and simulating 'new ways of working' as realistically as possible, we can conclude Cross-Stream Testing has served its purpose and In-Stream testing and assurance activities have been effective. It is envisaged heavily leveraging the test planning and preparation artefacts from In-Stream testing will be the most efficient way to deliver Cross-Stream Testing.

Test Phase Owner:	• Business Continuity & Program Testing Stream
Test Resources:	• Program Cross-Stream Testing – ROC Program resources • Business Cross-Stream Testing – Sydney Trains business users (ROC SME's) • Vendor, System Integrator and APD Test support via participation in defect triage, defect rectification, progression and regression testing of defect fixes for delivery to Cross Stream Testing as required
Test Governance:	• ROC Program
Deliverables:	• Cross-Stream Test Strategy • Detailed Test Plan (DTP) for Cross-Stream Testing of each Release • Test Objective Matrix (TOM) • Test Scenarios • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for Cross-Stream Testing of each Release
Test Location:	Release 1, 2 & 3 - Expected to be the Belmore BCP facility, which will provide additional assurance Belmore is fit for purpose as a ROC BCP facility. Release 4 - Expected to be the ROC building, which will provide additional assurance the ROC is fit for purpose and ready for operational go-live.
Test Environment:	ROC Cross-Stream environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	The Business Continuity & Program Testing Stream should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts.
Test Tool:	HP ALM
Test Artefacts:	Cross-Stream testing scenarios, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program

8.2 Requirements Quality Assurance (RQA)

The objective of RQA is to identify and remediate ambiguity, conflicts, inconsistencies, incompleteness or redundancy in requirements and/or specifications prior to a component or system being built. By improving the quality of requirements, RQA can enable design acceleration and decrease the duration and iterations of test phases as potential defects are identified and remediated prior to build.

The ROC Program has engaged an external consultancy with the tools, systems and expertise to provide an RQA 'proof of concept' for ROC Release 1. If this proof of concept is found to have been a good investment from a cost versus benefit perspective, the ROC Program may look to apply the approach more broadly across the Program. This activity will complement both the Requirements Management Plan (RMP) being delivered under the Systems Assurance and Planning Framework (SAPF) and the use of Holocentric as outlined below.

- The RMP provides an integrated approach for the management of requirements on the ROC Program including requirement definition, capture, documentation, traceability, baselining, version control and change management
- As the ROC Program's requirements management tool, Holocentric will be used to manage requirements in line with the recommendations within the RMP
- RQA will help to ensure requirements entered into Holocentric and managed in accordance with the RMP are of a high quality

8.3 Human Factors

The Sydney Trains rail network is a technical system, in which people are as much an integral part as any technology system or mechanical component. Technical systems are becoming more wide-reaching and complex, so it is essential to consider their impact on:

- Individuals, their knowledge, competence, skills, and abilities
- Local conditions, the workplace and how people perform as a team
- How the organisation employs people as valuable assets and invests in them

Human Factors supports the design of rail systems which optimise the contribution of rail staff. This can include the design of cabs, signalling panels, training courses and materials, management, recruitment processes, and control rooms. Applying human factors knowledge at the start of a project can reduce the need for re-design once systems have entered service, increase efficiency, reduce the potential of staff turnover, and increase productivity for the organisation as a whole.

On this basis, Human Factors will be a consideration throughout the ROC Program and within the design phases for T&C, Infrastructure and Technology Stream solution components.

A Human Factors Integration Plan will be delivered under the SAPF. This plan will outline how Human Factors requirements and assurance will be embedded within the ROC Program Design, Delivery and Testing Phases.

Cross-Stream Testing will represent a further opportunity to confirm how all the Human Factors elements of each stream come together and interact across the ROC program solution.

8.4 Early Business Benefits

In keeping with the sub-set of program principles listed below, ROC will look to identify opportunities to implement elements of the ROC Solution into current business locations prior to the new ROC building being ready to occupy, thereby delivering early benefits to the business.

- New technologies will be implemented in a phased roll out which optimises the balance of technical risk, business benefit and the level/rate of impact on affected users
- The program will avoid a “big-bang” implementation
- The technology roll out can occur prior to the completion and transition of the business users into the new ROC facility, provided that the business benefits associated with the new technology can be realised

Early realisation of these benefits will largely be enabled by the implementation of ROC Releases 1, 2 & 3 into current Business locations. Cross-Stream Testing will be applied to these Releases prior to any elements of the solution being operationalised. It is expected Release 4 Cross-Stream Testing may occur from the new ROC Building prior to staff relocations and ROC Day 1 operational go-live.

Delivery of ROC Program changes into Business operations are dependent on both the deployment of new/change technology into the Production environment and business readiness to go-live. Wherever possible the ROC Program plans to decouple these two activities.

9 Appendix A - Test Management Procedures

The general Test Management Procedures which will be adopted by the Technology Stream of the ROC Program are outlined in the sections below and are applicable to both internal Sydney Trains teams and vendor(s). These approaches may be applied to other Streams of the Program to the extent they are appropriate.

The test process typically involves the following stages:

- The **Engagement and Estimation** stage was largely conducted during preparation of the ROC Final Business Case
- The **Planning** stage lays the foundation for the test effort. The primary outputs of the planning stage are the ROC Program Test Management Framework (this document) and resulting Test Strategy documentation which will be produced by the program

Testing is an iterative process. Each test phase will transition through the following stages:

- **Preparation:** This stage builds on the initial planning effort. Detailed Test Plans DTP(s), Test Objectives Matrix TOM(s) and test cases are produced in preparation for test execution. Other key deliverables from this stage include the Technology Test Strategy, the Technology Environment Management Strategy (TEMS) and establishment of the test environment(s).
- **Execution and Reporting:** This phase involves execution of testing, tracking and reporting test execution and defect status. At the conclusion of execution, when the exit criteria have been met a Test Summary Report (TSR) is produced. The TSR provides an overview of the execution effort, associated test metrics, any major outstanding issues and generally provides a recommendation based on the test results.
- **Evaluation** is final stage of testing. The purpose of evaluation is to reflect, review and evaluate the overall test effort and activities to identify the things which worked well and should be retained within the testing process, as well as any opportunities to improve the way testing is conducted.

The execution of each of the nominated test phases often requires the involvement of many stakeholders. Test management and coordination becomes a complex undertaking. In particular the identification, coordination and availability of testing resources can be challenging. All personnel involved with the test effort need to understand their contribution as outlined in the 'Roles and Responsibilities' sections within test planning documentation.

The Test Strategy, Test Plans and associated test deliverables, are required as part of the overall Test Management Control System. They enable standardisation of the approach and management of testing, integrated planning and scheduling activities. These test management controls work in-conjunction with the Program Management Plan and the test execution controls as outlined in the following sections.

9.1 Entry and Exit Criteria

The following are examples of general test entry and exit criteria. Any additional criteria specific to particular test phase(s) should be called out in the DTP for that test phase:

Entry Criteria:	• Artefacts which test planning and preparation are dependent upon have been approved e.g. Requirements and Design documents • Test planning and preparation artefacts have been approved and/or accepted e.g. Test Strategy, MTP, DTP, TOM, test cases/scripts • Approved test cases have been loaded into the test management tool and testers have been granted the required level of access • Formal defect management and reporting process established • Availability of resources required to execute testing has been confirmed • Availability of resources required to analyse and resolve defects has been confirmed • Defect rectification SLA's are in place • Release notes describing the deployment package are available and include relevant details relating to the base product, code, configuration, reference data as required, plus installation/migration activities, supplied fixes, new features, any known defects and workarounds • Correct version(s) of deployment package(s) have been deployed to the test environment(s) • Test environments are available and in a fit state as confirmed by Shakedown Testing • Correct test environment access and credentials have been granted to testers • Test Data of sufficient quality, quantity and diversity to enable testing is available • Previous test phase exit criteria has been met and where applicable the TSR has been reviewed and approved by relevant stakeholders Once all test entry criteria have been met a test phase may commence. Where entry criteria have not been met the test phase cannot commence. Any deviation from the test entry criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management. If appropriate to do so, a risk or issue should be raised in the ROC Program DRICA-SBA and be managed via the ROC Program Risk/Issue Management process.

Exit Criteria:	• All test cases have been executed and the outcome recorded in the test management tool. An explanation has been provided for any test case which has not been executed • All defects identified during the test phase have been recorded in the test management tool and are available for review • No Severity 1 or Severity 2 defects outstanding • An agreed action plan is in place to address outstanding severity 3 and severity 4 defects including target resolution time frame The number of outstanding severity 3 and severity 4 defects and the cumulative impact of these defects on the overall solution must be accepted by Sydney Trains. Once all test exit criteria for a test phase have been met a TSR may be prepared. Where exit criteria have not been met the test phase should not conclude. Any deviation from the agreed exit criteria would need to be approved by the ROC Program Test Manager in consultation with ROC Program Management. If appropriate to do so, a risk or issue should be raised in the ROC Program DRICA-SBA and be managed via the ROC Program Risk/Issue Management process.

9.2 Test Phase Gate Meetings

Program Test Teams (with stakeholder participation as required) will conduct test gating meetings prior to commencement of test execution for each Program test phase. These meetings will serve as a checkpoint to determine whether:

- Exit Criteria from previous test phase have been met
- Entry Criteria for the following test phase have been met
- Any other risks, issues or constraints exist which need to be reviewed in the context of the coming test phase

9.3 Test Phase Suspension & Resumption

If any defects identified seriously impact test progress the Program Test Manager, in consultation with Program Management may elect to suspend testing. Criteria which might justify test suspension include:

- Hardware/software is not available at the times indicated in the project schedule
- Product under test contains one or more critical defects which seriously prevent or limit testing progress
- Assigned resources are not available when needed for test execution and/or support

If testing is suspended, resumption will occur when the problem(s) which caused the suspension have been resolved. Where the cause of suspension is a critical defect, the fix must be successfully verified by the test team before testing resumes.

9.4 Risk Based Testing

Risk will often be a critical consideration when the ROC Program Management is making decisions. At its core, testing is about quantifying and mitigating risk.

The ROC Program will adopt a risk based approach to testing which will assist with understanding and managing risk. This approach involves the prioritisation of test cases into essential, high, medium and low using criteria based on likelihood and/or impact of failure including:

- Priority of requirement(s) being tested
- Business criticality of the function
- Frequency of use
- Functional coverage

So far as it is feasible to do so, tests will be executed in priority order. Benefits of this approach include:

- Defects related to high priority test cases are identified earlier in a test phase
- At any point in time tests not executed are at the lower end of the priority scale

If test execution were to come under schedule pressure there are a number of options available to the Program including:

- Increasing resources working on testing
- Working extended hours and/or weekends
- Reducing the scope of testing to be executed

The latter can introduce an increased level of risk. In the event ROC Program Management need to consider reducing the scope of a test phase or exiting a test phase prior to the exit criteria being met for any reason, one of the primary considerations will be the level of risk the Program and stakeholders are prepared to accept.

Test related information can be produced to help decision makers and stakeholders quantify the risk associated with any such decisions. This information would be a key input to gaining the understanding and agreement required to deviate from the Program's Test Management Procedures.

9.5 Test Tools

The following test tools and applications will be used by the ROC Program:

- HP ALM is Sydney Train's enterprise test management tool. Test teams (both Sydney Trains and vendor) will utilise HP ALM for the management of manual test execution and defect management from SAT onwards as a minimum
- LoadRunner is Sydney Train's enterprise load and performance test management tool. It helps measure the behaviour and performance of a system under load. LoadRunner can emulate simultaneous and realistic system usage by thousands of users across an enterprise and employs performance monitors to identify and isolate potential problems
- Quick Test Professional is Sydney Train's enterprise automated regression test management tool. It can provide functional and regression test automation for software applications and environments

The test tools are administered by the Testing and Quality Assurance Services Team within TfNSW. First point of contact for test tool support should be the respective test phase Test Lead, then the Test Manager. If the matter cannot be resolved locally the Test Manager should escalate to the Testing and Quality Assurance Services Team.

9.6 Test Co-ordination

During test execution regular co-ordination meetings will be held between test team(s), Program representatives, IT Portfolio Team(s), Business stakeholders, Project Manager(s) and vendor(s). The purpose of these meetings is to report on progress and address any issues raised. The standing agenda for the meetings is as follows:

- Review test progress against forecast
- Review defects raised against program quality targets including:
  - Number of defects raised
  - Severities
  - Phase Containment Effectiveness (PCE) - Defects found in the current test phase which 'should' have been identified and resolved in an earlier test phase
- Review test resourcing levels against forecast
- Review test risks
- Review test issues
- Any other business

9.7 Test Status Reporting

During test execution test status reporting will typically occur on a daily basis. Status reporting will be distributed by email, which will be supplemented by regular co-ordination meetings and conference calls. The phase Test Manager is responsible for producing and distributing test status reporting, which will typically detail the following:

- Test progress against forecast summarising total tests by status
- Total defects raised summarised by severity, priority and status
- Plan for the following period
- Risks and/or issues
- Schedule and outlook

9.8 Defect Management

HP ALM will be used as the Program's test management tool.

The objective of defect management is to ensure all defects encountered during the course of testing are appropriately raised, detailed, evaluated, prioritised, reported, resolved, verified and closed.

This document provides details on how defects are to be managed for Program test phases including definitions of defect status, pass & fail criteria and defect severities and priorities.

The high level process by which defects will be managed on the ROC Program is outlined below:

- Any anomaly identified during testing should initially be raised in HP ALM noting the test case which was being executed when the defect was encountered and capturing sufficient relevant details to facilitate analysis of the defect
- Defects raised will be triaged and assigned to the most likely resolver group
- The resolver group should update the defect with details of the defect cause, nature of the fix applied, confirm a successful retest of the fix, successful regression testing if appropriate and the software version in which the fix will be delivered to the tester for verification

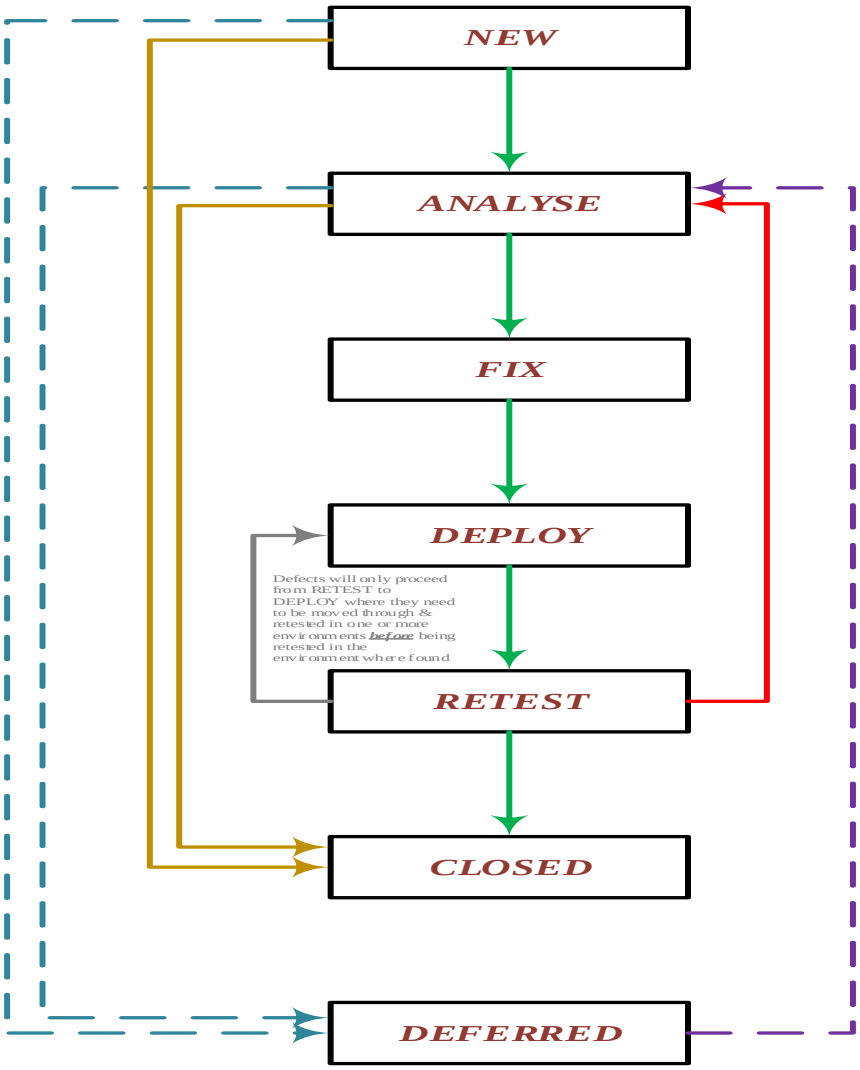
- Each software version delivering fixes into a test environment should be appropriately detailed in Release Notes
- Once the fix has been applied to the test environment(s) it should be retested by an appropriate resource (ideally the individual who raised the defect) to determine whether the defect has been resolved
- If retesting determines the fix has been successful, HP ALM should be updated by the tester to indicate the defect has been resolved. Relevant artefacts such as screen shots should be added to HP ALM and the defect should be closed
- If retesting determines the fix has not been successful, HP ALM should be updated by the tester to indicate the exact nature of the failure. Relevant artefacts such as screen shots should be added to HP ALM and the defect should be assigned back to the appropriate resolver group

This process is reflected in the following defect status definitions and Defect Process Workflow diagram.

Defect Status	Description	Actions to be undertaken
New	When a defect is raised it will automatically be assigned the status of NEW. This status indicates the defect has been logged and is undergoing business/testing evaluation/triage to determine whether it is a valid defect or not.	If the defect is found to be valid, the defect's status will be changed to ANALYSE and it will be re-assigned for a technical evaluation to determine the root cause of the problem. If the defect is found to be invalid, the defect's status will be changed to CLOSED and its sub-status will be set to identify the broad reason why it was classified as invalid. If the defect is an existing Production Problem, its status should be changed to FOUND (see companion document). In all cases, the defect record in QC must be updated to describe why the decision was made.
Analyse	Having determined the defect is valid from a business/testing perspective, the defect needs to be investigated to determine the underlying cause.	There are five possible outcomes from this technical review: 1. The defect is determined to be valid and will be fixed as part of the project's next implementation so its status should be changed to FIX and the defect will be re-assigned 2. The defect is determined to be valid but it will not be fixed as part of the next implementation. Status should be changed to DEFERRED and the defect's Cycle is reset to the implementation in which the defect will be addressed 3. The defect is determined to be valid but it will not be fixed, e.g. cost/effort of correcting the problem outweighs effort of implementing a workaround. Defect's status should be changed to CLOSED and sub-status ACCEPTED 4. The defect is invalid. Status should be changed to CLOSED, sub-status identifies reason why it was classified as invalid (DUPLICATE or REJECTED) 5. Defect is identified as a known Production Defect, status is changed to FOUND (see companion document)

Defect Status	Description	Actions to be undertaken
Fix	Having decided the defect will be corrected as part of the current project, a 'correction' will be produced and unit tested.	If those unit tests are successful, the defect's status will be changed to DEPLOY and it will be re-assigned. If the unit tests are not successful, the FIXER will make a further attempt to correct the problem and repeat those unit tests. This process will be rerun until such time as the unit tests are successful.
Deploy	This status indicates that the 'fix' for a defect is ready to be implemented into the test environment where the defect was found.	The timing of the fix's deployment must always be co-ordinated between the DEPLOYER and the TEST MANAGER so that the validity of the testing is not undermined. Once the 'fix' has been delivered into the nominated environment, the defect's status is changed to RETEST and it is re-assigned.
Retest	This status indicates that the defect's 'fix' has been deployed and can be retested under the original conditions (and in the same environment) where it was first encountered.	If the tests performed were ***not*** in the environment where the defect was originally found, its status should be changed to DEPLOY and its Sub-Status set so that it identifies the next environment on its way back to the location where it was found. If the retest is conducted in the environment where it was initially encountered, change the defect's status to CLOSED with a sub-status of SUCCESSFUL. Regardless of which test environment the retest occurs in, if it fails, change the defect's status to ANALYSE and its sub-state to RETEST FAILED.
Closed	This is the final state for every Pre-Production Defect.	As with every other status listed above, when changing a defect's status it is important that the appropriate comments are added to ensure that we have a complete audit trail of what has happened to the defect, why it happened and as much contextual information as possible has been included. See the next sub-section of this document for a full list of the sub-states used with this status.
Deferred	This status indicates the Business has formally agreed to have the defect fixed as part of a specified, later Release.	When testing for the implementation to which the defect was defers begins, the defect's status is changed to ANALYSE and its sub-status to PREVIOUSLY DEFERRED

The Defect Process Workflow diagram below reflects the path most program defects are expected to follow.



9.9 Defect Reporting Standards

All defects identified during testing will be analysed to determine a root cause of the problem. To support the required analysis, as a minimum the following information should be captured in each defect raised:

- Business requirement, Use Case and/or Test Case being executed when the defect was identified
- Detailed description of the problem
- Steps to recreate the problem
- Expected results – Outcome the tester expected to observe
- Actual results – Outcome observed including how it differed from the expected outcome
- Severity
- The software release (build) it occurred in
- Data, login, screenshots to be stored in defect.

Where possible, each tester should track the defects they have raised through to resolution.

9.10 Resolving Defects:

The cause of a defect can differ from the symptom(s) observed by a tester, so it is important the resolver updates the defect detailing the fix applied. The minimum information required in relation to the resolution of a defect may include:

- Cause of the defect
- Fix applied to resolve the defect
- Software version in which the fix will be delivered to the tester for verification
- Testing undertaken by the resolver to verify the defect has been corrected
- Impacted system(s) and regression implications of the fix applied

9.11 Defect Triage Meetings

The defect resolution process often requires many groups work closely including test team(s), project resources, Project Manager(s), vendor resources and internal Sydney Trains development teams. During test execution regular defect triage meetings will be held to:

- Review the severity and priority assigned to defects
- Determine the most appropriate resolver group
- Determine the target content and delivery dates for deployments to test environment(s)

9.12 Pass & Fail Criteria and Test Case Status

Test Case Status	Description
Pass	A test case will be deemed to have passed if: • The item tested behaves as expected and as per the requirement(s) it was derived from • The item will not introduce a problem or failure • The item will not introduce an unacceptable risk of a problem or failure
Fail	A test case will be deemed to have failed if: • The item tested does not behave as expected or as per the requirement(s) it was derived from • The item will introduce a problem or failure • The item will introduce an unacceptable risk of a problem or failure
Conditional Pass	A Conditional Pass is assigned to a test case which passes the intent of the test, where a low severity, non-critical defect has been observed and raised in HP ALM.
Not Run	Test case execution has not commenced.
Not Completed	Test case execution has commenced, is in progress and has not progressed to the point where a status of pass, fail or conditional pass can be assigned.

Not Applicable (N/A)	A status of N/A is assigned to a test case which has been agreed to no longer be applicable. Assigning the N/A status rather than deleting the test case ensures test case numbers in the TSR align to the number of test cases at the commencement of the test phase.
Blocked	A test case may be assigned the status of Blocked for a number of reasons including but not limited to: • A defect which needs to be resolved is preventing execution of the test case • Functionality not yet delivered • Required test data not available

9.13 Defect Severity Definitions

The severity level assigned to a defect is a reflection of how serious the defect is. It can be a measure of the impact on testing and the ability to continue with the test phase or of the impact the defect would have in the Production environment. The following definitions provide the severity levels which should be assigned to defects raised during testing within the ROC Program.

Severity	Severity Description
Severity 1	Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists. Examples of severity 1 defects include: • Safety Issues • The system or a core component of the system is inoperable Sydney Trains would not consider taking Severity 1 defects into the next test phase or to the Production environment.
Severity 2	High Impact – Assigned to major errors. Some key functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality but the defect must be resolved before the component can be migrated to the next test phase or to production. Examples of severity 2 defects include: • The system or component is operable however one or more functions are not right or have not been delivered and no acceptable workarounds exist • Any issue with data accuracy or integrity which may cause confusion among the Sydney Trains end-user community Sydney Trains would not usually consider taking Severity 2 defects into the next test phase or to the Production environment unless there were exceptional circumstances. Stakeholders would need to have understood and accepted the risk/impact via approval of the Test Summary Report (TSR). There is an expectation any Severity 2 defects would be resolved by the next Release of the application.

Severity	Severity Description
Severity 3	Medium Impact – Assigned to minor errors. Some functionality does not conform to the specification or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact on Sydney Trains end users. Testing can continue and the component can be migrated to the next test phase or to production providing exit criteria are met. Examples of severity 3 defects include: • The system or component is operable however one or more functions are not right or have not been delivered and acceptable workarounds exist Sydney Trains may consider taking a small number of Severity 3 defects into the next test phase or the Production environment provided the cumulative impact of these defects and associated work arounds are acceptable to stakeholders and do not damage the reputation of Sydney Trains, the Program or our partners. Stakeholders would need to have understood and accepted the risk/impact via approval of the Test Summary Report (TSR).
Severity 4	Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on Sydney Trains end users or the application. Examples of severity 4 defects include: • Misspelled (but not misleading) text • Inconsistent fonts • Poor grammar Sydney Trains may consider taking a small number of Severity 4 defects into the next test phase or the Production environment providing the cumulative impact of these defects and associated work arounds are acceptable to stakeholders and do not damage the reputation of Sydney Trains, the Program or our partners. Stakeholders would need to have understood and accepted the risk/Impact via approval of the Test Summary Report (TSR).

9.14 Defect Priority Definitions

Each defect is also assigned a priority level which indicates to development team(s) the order in which defects of the same severity should be addressed. Priorities which can be assigned to defects within the ROC Program are:

- 1 – High
- 2 – Medium
- 3 – Low

Assuming open defects of every severity and priority combination, the order in which defects should be addressed is outlined in the table below:

Order	Severity	Priority
1	Severity – 1	Priority – High
2	Severity – 1	Priority – Medium
3	Severity – 1	Priority – Low
4	Severity – 2	Priority – High
5	Severity – 2	Priority – Medium
6	Severity – 2	Priority – Low
7	Severity – 3	Priority – High
8	Severity – 3	Priority – Medium
9	Severity – 3	Priority – Low
10	Severity – 4	Priority – High
11	Severity – 4	Priority – Medium
12	Severity – 4	Priority – Low

9.15 Defect Rectification SLA's

Service Levels define the target time to fix defects and take into account:

- The urgency of the situation
- The need to strike a balance between speed, quality, sensible packaging and delivery of fixes

For the ROC Program it is envisaged SLA's will be agreed around delivery of configuration fixes and fixes to the underlying COTS products would be delivered via vendor product roadmap(s) and internal processes.

Note – The SLA information below has been taken from Sydney Trains Enterprise Release Planning (ERP) documentation and intended to be used as a guide. ROC Program SLA's will need to be agreed.

Defect Severity	Response Time	Resolution Time	Validation Time	Total SLA
Severity 1	0 - 2 Hours	4 Hours	4 – 8 Hours	Less than 1 Day
Severity 2	0 – 4 Hours	1 Day	1 Day	1 Day
Severity 3	0 - 2 Days	3 Days	4 Days	4 Days
Severity 4	0 – 5 Days	5 days	5 Days	5 Days

In the context of the defect statuses:

- Response Time is the time taken in the New Status (including Triage)
- Resolution Time is the time taken in the Analyse and Fix Statuses
- Validation Time is the time taken in the Deploy, Retest and Closed statuses
- Durations are expressed in business hours and business days
- Service levels are dependent upon availability of sufficient information to analyse and resolve the defect

9.16 Change Management

Under the SAPF, and more specifically the RMP and the CMP, once a specification has been reviewed and formally agreed upon it will be baselined. A baselined artefact can only be changed through formal change control procedures. On the ROC Program baselines are maintained as part of the Configuration Management Process under the CMP.

ROC Program requirements specification will be baselined and fall under the Configuration Management Process. As such any new requirements or variations to existing requirements identified during testing will be raised as a Program Change Request (PCR) and follow the Configuration Management Process.

Each PCR will need to be impact assessed based on a number of criteria including but not limited to:

- Cost
- Impact on Schedule
- Impact on test effort

9.17 ROC Technology Environments

The ROC Program will deliver four new technology systems into a complex landscape of existing applications. Technology environment requirements and specifications will be detailed in the Technology Environment Management Strategy (TEMS) and the Technical Infrastructure Design (TID), which are deliverables of the Detailed Design and Build Phases.

It is envisaged non-Production technology environments (including integration with existing applications where necessary) will be required to accommodate delivery of the following activities in line with Program time frames:

- System Development & Unit Testing
- System Testing
- System Acceptance Testing
- System Integration Testing
- Load & Performance Testing
- User Acceptance Testing
- Cross-Stream Testing
- User Training
- System Demonstrations

It is also expected instances of the new ROC technology systems will need to be delivered to complete the Sydney Trains Production Environment including DR capability.

9.18 ROC Technology Environment Management

In keeping with the ROC Statement of Requirements which was published as part of the technology RfP, Sydney Trains is looking for the System Integrator to be a single point of accountability with 'overall responsibility for the specification, design and build of ROC systems, through to bringing the system into production and change of control to the target support model'.

Technology environment management will be critical to achieving this. The details around technology tests environment management will be delivered in the Technology Test Environment Management Strategy (TEMS), which is a deliverable of the Detailed Design phase and as a minimum is expected to include the following information:

Activity	Description
Environment Availability	Aside from agreed maintenance windows, test environments are expected to be available 24/7 during test planning, preparation and execution periods. Sydney Trains should be both informed and approve any planned outages during these times. Unplanned outages will be managed through environment support.
Environment Support	Details will need to be agreed within the TEMS, however during test planning, preparation and execution periods the following types of environment support arrangements are likely to be required: • Standard Support Mon to Fri – 8.00am to 6.00pm • Extended Support Mon to Fri – 6.00am to 10.00pm (with 48 hours' notice) • Weekend Support Sat & Sun – 8.00am to 6.00pm (with 48 hours' notice)
Configuration Management	The Configuration Management Strategy the program will adopt to assure sound practice around code version control, code branching and merging.
Release Management, Release Notes, Deployments & Outages	In order to strike the right balance between speed, quality, sensible packaging and the delivery of fixes to testing, agreed deployment windows will need to be agreed. Test productivity can also be impacted if deployment outages occur too frequently. Outside the agreed deployment times there should be a provision whereby the Phase Test Manager can agree to ad hoc deployments if required. Each deployment to a test environment should be accompanied by sufficiently detailed Release Notes to inform the test team which fixes have been delivered and enable the status of those items to be updated in the test management tool.
Back Up & Restore	The back-up and restore requirements for test environments.
User Access & Administration	The provision of user access to test environments including ensuring access to the required role profiles and privileges.

Many test phases will have a dependency on integration with existing application environments. These dependencies should be detailed within the TEMS to ensure ROC test environment requirements are met.

9.19 Testing Escalation Path

Escalation is a critical process used by Program team members to resolve issues. Clear communication is the key to any escalation process and the objective of escalation is to create a path for resolution of issues.

For ROC testing activities the Escalation path will be as follows:

Tester => Test Lead => Test Manager => Program Test Manager => Program Management

Some the key principles of the escalation process have been outlined below:

- All program team members and participants are empowered to escalate
- Escalation needs to be managed
- Escalation must be documented
- Escalation needs to be timely
- Escalation is a risk and issue mitigation process

9.20 Training

Sydney Trains business users (also known as Subject Matter Experts or SME's) who will participate in Technology UAT and Cross-Stream Testing will need to be trained in the new ROC technology systems, processes and procedures prior to the commencement of R1 Technology UAT.

Training SME's to participate in these activities and the subsequent training of all end users is within the scope of the ROC T&C stream.

10 Appendix B – Technology Test Phases

The ROC Program has engaged product vendors and a System Integrator who will deliver the majority of Technology In-Stream testing on behalf of the Program. This document does not set out be prescriptive about how these vendors deliver testing. Vendors should document their recommended test strategy and approach via deliver of the Technology Test Strategy and other test planning documentation for Sydney Trains review and approval. The ROC Program will also provide a layer of Test Governance across vendor technology testing.

In January 2015 an agreed interim version of this document (v1.0) was shared with technology vendor(s) participating in the High Level Design Phase of the Program. It provided an early view of the Program Test Management Framework, including early Program thinking around technology test phases, roles and responsibilities to assist vendors in preparing a BAFO. The detail relating to these test phases and how they might be delivered are reflected in this appendix.

10.1 Shakedown Testing

Following a deployment to any test environment a Shakedown Test will be performed. The Shakedown Test is generally a selected sub-set of test cases executed to verify the deployment has been successful and all required components of the test environment are present with required connectivity and interfaces in place. A successful Shakedown Test indicates both the deployment and the environments are ready for the commencement of a test phase.

10.2 Unit Testing (UT)

Test Phase Definition:	Unit testing focuses on the key activities which must be verified at the component level to demonstrate modules operate as designed. Unit Testing is executed to ensure valid operation of components prior to System Testing and may include verification of: • Mandatory Fields • Event Handling • Boundary Testing of Upper & Lower Limits • Character Acceptance • Error and exception handling
Test Phase Owner:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Resources:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Deliverables:	There will not be any formal deliverables produced as artefacts of Unit Testing. System Testing will follow, be delivered by the same test phase owners as Unit Testing and be governed by the ROC Program.
Test Location:	Vendor site(s)
Test Environment:	ROC Dev environment(s). Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.

Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Application teams and vendors may elect to either use in-hose test management tools or Sydney Trains test management tool (HP ALM) for Unit Testing.
Test Artefacts:	There are no formal test artefacts produced during Unit Testing which will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.3 System Testing (ST)

Test Phase Definition:	New ROC systems and changes to existing applications tested without integration. System Testing may include: • Design Validation – Ensures an individual system as a discreet module will correctly process, pass and store data as specified. Test stubs, harnesses or simulators should be used during System Testing to ensure boundaries of the solution are validated in preparation for integration testing • Usability Testing – Ensures the system complies with application standards and presentation policies. This may include consistency of hotkeys, uniform navigation and listing standards. Usability Testing ensures the new application or change to an existing application will 'fit' into the existing application landscape • Data Conversion – Verification of data loads, data migrations, data conversions and data handling. Includes ensuring any data to be loaded is accurately defined • Service validation including adoption of standards e.g.: SIRI and simulated service testing using SOAP UI and stubs • Testing of Non-functional requirements
Test Phase Owner:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Resources:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Governance:	• SP4 – Systems Integrator • ROC Technology Stream

Deliverables:	Deliverables to be provided for each product and change being system tested: • Detailed Test Plan (DTP) for System Testing • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for System Testing
Test Location:	Vendor site(s)
Test Environment:	ROC Dev environment(s). Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Application teams and vendors may elect to either use in-hose test management tools or Sydney Trains test management tool (HP ALM) for System Testing.
Test Artefacts:	System test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.4 System Acceptance Testing (SAT)

Test Phase Definition:	SAT verifies each application which has exited System Testing can be correctly installed, configured and provisioned into an integrated ROC Test Environment. Each Product Vendor will then execute an agreed subset of tests to prove the applications and environment are ready for the commencement of SIT.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	Test Execution: • SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications Witnessing Testing: • SP4 – System Integrator

Test Governance:	• SP4 – System Integrator
Deliverables:	Deliverables to be provided for each product and change being system tested: • Detailed Test Plan (DTP) for System Testing • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for System Testing
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC SAT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	SAT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.5 System Integration Testing (SIT)

Test Phase Definition:	SIT verifies systems which have been proven to function correctly in System Testing work together when integrated. System Integration Testing should commence with point to point service integration testing for example REM to TIBCO, TIBCO to REM, changed existing application to TIBCO, TIBCO to changed existing application. Transaction flows across all components and systems which make up the ROC Technology solution will then be verified to ensure data flows through each component of the solution as expected without conflicts, corruption, duplication or loss. SIT should also include: • Non-functional testing such as failure and recovery • Sociability Testing which ensures all new and existing applications can co-exist on a user's desktop without conflict.

Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for SIT • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for SIT
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC SIT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	SIT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.6 Load & Performance Testing (L&P)

Test Phase Definition:	Load & Performance Testing evaluates the compliance of a system or software components against specified non-functional requirements such as response times, transaction processing time and resource utilisation. Load and Performance Testing may include the following types of tests: • Performance • Soak • Volume • Scalability • Stress • As we as providing results which can be used as an input to Capacity Planning It is expected L&P Testing will first be executed within the SIT time frames and be re-run over numerous iterations throughout the program lifecycle.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for L&P • L&P Scripts • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for L&P
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	The environment used for L&P Testing should be as 'production like' as possible. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) Document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.

Test Tools:	Load Runner and HP ALM
Test Artefacts:	L&P test scripts, results and defects stored in Load Runner and HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.7 Security & Penetration Testing

Test Phase Definition:	Security Testing checks whether the application(s) or service(s) are secure including requirements covering confidentiality, integrity, authentication, availability, authorisation and non-repudiation by answering the following questions: • How vulnerable is the system to attacks; can anyone hack the system or login to the application without authorisation? • How well is the data protected while the system maintains functionality? • Is there any information leakage via encryption, firewalls, wide range use of software and hardware? For the ROC Program, Security requirements as stated in the Detailed business requirements will be tested during System and System Integration Testing as practicable. As such, these activities will be covered by the Technology Test Strategy document and subsequent technology test planning documentation. The rest of this section relates specifically to Penetration Testing, which is a specific subset of Security Testing. Penetration Testing involves playing the role of an attacker in order to determine the vulnerability of an organisation's IT landscape against unauthorised attack, malicious user(s) or malware. The ROC Program plans to engage a third party to undertake Penetration Testing. The scope of Penetration Testing required by the ROC Program is to be determined during the build phase and documented in the Security and Penetration Detailed Test Plan. It is envisaged Penetration Testing may be re-run over numerous iterations throughout the life of the ROC Program.
Test Phase Owner:	• ROC Technology Stream
Test Resources:	• External Consultancy
Test Governance:	• ROC Technology Stream and Sydney Trains Security Architect(s)
Deliverables:	• Detailed Test Plan (DTP) for Security & Penetration Testing • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for Security & Penetration Testing Note – Due to the nature of Security & Penetration Testing, distribution of artefacts may be restricted.

Test Location:	TBC. Potentially External Consultancy offices.
Test Environment:	TBC via consultation with Sydney Trains Security Architect(s) and documented in the Security and Penetration Detailed Test Plan.
Test Data:	Test data for Penetration Testing will be the responsibility of the external consultancy and will be socialised and accepted (as required) via the reviews and approval of Security & Penetration Testing Planning artefacts.
Test Tool:	Access to defects identified during Penetration Testing by the external consultancy is likely to be restricted. As such they may be recorded in a separate instance of HP ALM or in an appropriate securely stored format. Additional tools to be supplied by external consultancy as required.
Test Artefacts:	Security & Penetration scenarios, results and defects will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.8 Automated Regression Testing

Test Phase Definition:	A selection of ROC scenarios will be selected and form the basis of the ROC Automation Regression Suite. These scripts will need to be maintained throughout the program lifecycle as ROC systems and existing applications are developed and changed. It is expected Automated Regression Testing will first be executed within the SIT time frames and be re-run over numerous iterations throughout the program lifecycle.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for Automated Regression • Automated Regression Scripts • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for Automated Regression
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	Automated Regression scripts may be run in a number of environments over the course of the ROC Program. Details to be confirmed in the ROC Technology Test Strategy and ROC Technology Environment Management Strategy (TEMS) documents.

Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Quick Test Professional (QTP) and HP ALM
Test Artefacts:	Automated Regression test scripts, results and defects stored in QTP and HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.9 User Acceptance Testing (UAT)

Test Phase Definition:	UAT verifies Business requirements have been met in the technology systems delivered. The objective of UAT is to test the overall business functionality of technology systems from an end user perspective in the context of Business processes and roles to assure the overall solution is fit for use in a business context. By proving systems will perform as expected, UAT allows sponsors, stakeholders and end users to provide their acceptance of the technology systems delivered. A ROC test principle is that program testing should occur prior to business testing. Program test resources will execute UAT scenarios in order to identify and resolve defects prior to Business UAT. Benefits of this approach include: • Use of professional test resources to save Business resources from 'testing fatigue' • Build program confidence prior to business exposure Business resources will then execute (a potentially cut down set of) UAT test cases. Benefits of this approach include: • Duration, iterations and defects greatly reduced by program UAT • Business resources initial experience with systems is a positive one • Positive word of mouth from business testers back to their teams The success of this approach can be measured by analysis of the defects identified during Business UAT. If earlier test phases are permitted to achieve their agreed exit criteria and defects which could have been identified and resolved in those test phases are found during Business UAT, we would conclude earlier test phases could have been more effective. If this is the case, further analysis should be conducted to determine how these test phases can be improved for future Releases. If Business UAT identifies and resolves the types of defects only SME's from the Business were likely to pick up, we can conclude Business UAT has served its purpose and earlier test phases have been effective.

Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• Program UAT – ROC Program and SP4 resources • Business UAT – Sydney Trains business users (ROC SME's), supported by ROC Program, Product Vendor and System Integrator resources
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for UAT • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for UAT
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC UAT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) Document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	UAT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

11 Related Documents

The following documents have been referenced in preparing this Program Test Management Framework.

Document Title	Version Number
ROC Roadmap	V2.1
ROC Program Systems Assurance & Planning Framework SoW	V11.1
Rail Operations Centre Concept of Operations	V4.0
PMLC ROC Project Management Plan	V2.2
ROC Final Business Case	V5.0
Program Quality Management Plan	V2.0
Infrastructure Assurance Plan	V1.0
ROC Solution Scope	V1.1
Rail Operations Centre (ROC): Timeline to 2018	(Final)

Appendix I – Environment Specifications

As set out in Module 3.

Appendix J – Governance Schedule

ROC-TEC-PL-0001 -
ROC Technology Ven

Communication Plan

Rail Operations Centre (ROC) Vendor Communication Plan
Rail Operations Centre Program

ROC Release 2 Detailed Design	
Project or Program	"Program"

Communication Plan

Document Ownership Information

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(Circulated versions only)

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Version	**Date**	**Author**	**Reason for Issue / Changes Included**
1.0	27/11/2015	Kelly McDonald (Change Specialist)	First Draft for Sydney Trains review
1.1	12/02/2016	Kelly McDonald (Change Specialist)	Further update following internal review
1.2	12/02/2016	Kelly McDonald (Change Specialist)	Second Draft for Thales review. Updates include Thales feedback; Roles and Governance section changes; minor corrections
1.3	29/02/2016	Kelly McDonald (Change Lead)	Migrated document to new template format; Issue and Escalation Process section minimised
1.4	04/04/2016	Kelly McDonald (Change Lead)	Governance section updated
1.5	13/05/2016	Kelly McDonald (Change Lead)	Final update following joint review of this and the Governance Structure document with Sydney Trains
1.5.1	17/05/2016	Kelly McDonald (Change Lead)	Definition table added; minor Role updates
1.5.2	23/05/2016	Kelly McDonald (Change Lead)	Minor corrections/updates (pp1, 6-11; 23-25; 27-29; Document Properties; Header/Footer)

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Communication Plan

Contents

List of Diagrams

Reference Documents

The following documents were referenced as part of the development of this document:

Document Name	Version	Date
ROC Release 1 REM Detail Design Project Communication Plan	v1.0	12/11/2015
ROC Release 1 REM Detail Design Project Communication Plan	v3.0	19/01/2016
ROC Release 1 REM Detail Design Project Communication Plan	v4.0	05/02/2016
ROC Meeting Etiquette Poster	N/A	12/11/2015
ROC Program Governance Schedule (contract schedule)	N/A	11/05/2016

1 Document Purpose

The ROC Technology Vendor Communication Plan clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development.

The ROC Technology Vendor Communication Plan outlines:

- What needs to be communicated and to whom;
- How often these exchanges should happen; and
- In what format and why they are necessary.

2 Definitions

Term	Definition
Customer	"Customer" means Sydney Trains
DRICA / DRICASB	Dependencies | Risks | Issues | Changes | Actions / Dependencies | Risks | Issues | Changes | Actions | Scope-Benefits
Individual Contractor / Contractors	Refer to "Other Contractor"
System Integrator (SI) Contractor or Contractor	"System Integrator (SI) Contractor" or "Contractor" means Ajilon Australia Pty Ltd
Other Contractor	"Other Contractor" means the IMS, CIMS or DTTS contractor
SME	"SME" means Subject Matter Expert

3 Project Reporting

3.1 Project Highlight Reports

A Project Highlight Report will be published weekly by the SI Project Manager to the Sydney Trains ROC Program (refer to Matrix for full list of recipients). The report will contain:

- Achievements for the period;
- Plan for the next period;
- Status of any Change Requests;
- Milestones and deliverable progress; and
- Risks, Actions, Issues and Decisions (DRICA)

4 General

4.1 Introduction

The ROC Technology Vendor Communication Plan document describes the relationship between the Customer and the Contractors (Vertical), as well as the SI Contractor and Other Contractors (Horizontal) to enable effective, efficient, and high-quality delivery of Services to the Customer and to each other, to enable the Customer to achieve the business objectives of the ROC Technology Solution.

This document sets out the communication structure for overall management of the relationship, the roles and responsibilities of the parties to maintain a working relationship, and the type, content and frequency of the meetings that will be held.

The purpose of the ROC Technology Vendor Communication Plan is to ensure that guiding principles, objectives, structures, operating guidelines, methods and measures for implementing effective communication are clearly defined and consistently implemented.

4.2 Guiding Principles

The ROC Technology Vendor Communication Plan is designed to achieve the following guiding principles:

a. Promoting a collaborative relationship

b. Continually validating consistency of the results and benefits derived from the ROC Technology Vendor Communication Plan with the Customer's and the Contractor's expectations and objectives

c. Establishing a structure to streamline day-to-day management and administration of the relationship

d. Ensuring that an effective relationship management process exists for communication, decision making, joint issue resolution, the Customer satisfaction, contract change and continuous improvement

e. Ensuring overall monitoring of contractor performance

f. Ensuring that potential issues in due course are investigated, resolved and – if necessary – escalated

g. Establishing effective means for managing the delivery of quality

h. Monitoring established Customer objectives.

5 ROC Technology Vendor meetings

The following ROC Technology Vendor meetings are established for the ROC Program.

5.1 Executive Meeting

The Executive meeting is the forum from which executives from Sydney Trains and the System Integrator discuss the progress of the project and potential future opportunities.

The Executive meeting is conducted annually involving: from Sydney Trains, the CIO, General Manager of the relative Business and the ROC Program Director. From the Contractors perspective, attendees should be: CEO, CIO, and Senior Account Manager or appropriate "C" level Representative.

The following administrative matters relate to the Executive Meeting:

a. Attendees:
   i. From the Customer: Chief Information Officer (Chairman), the General Manager (of the relative Business), the ROC Program Director (who supports the CIO).
   ii. From the Contractor: Chief Executive Officer (Vice Chairman), the Chief Information Officer, Senior Account Manager or "C" level representative.

b. The Customer's Chief Information Officer shall be supported by the ROC Program Director; The Contractor's General Manager shall be supported by the Managing Director.

c. Agenda: The following items should be, as a minimum, on the agenda for each meeting:
   i. Resolution of risks and issues related to the overall relations between the Customer and the Contractor
   ii. Overall performance against business goals
   iii. Where applicable, revision of goals and long term plans for development of the relationship
   iv. Identify and discuss joint strategic business direction and opportunities
   v. As the highest level on the escalation path. Act as the ultimate point of joint dispute resolution.

d. Material: The following support document should be made available to the attendees of the Executive Meeting:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. ROC Vendor Executive Pack documenting contract performance
   iv. Recommendations as escalated from the ROC Vendor Steering Committee
   v. Critical Risk and Issues derived from the Risk and Issues Register
   vi. Decision log.

e. Meeting minutes: Minutes shall be taken by the Contractor and socialised with the Customer's attendees within 48 hours of the end of the meeting.

f. Frequency: Executive Meetings shall be held annually commencing on the first anniversary of execution of the Detailed Design agreement.

5.2 ROC Vendor Steering Committee

The ROC Vendor Steering Committee is the primary focal point for executive and strategic decisions, as well as the escalation point for resolution. The ROC Vendor Steering Committee shall meet monthly or more frequently if required, to promote a relationship based on trust and mutual understanding and assess and set overall strategy for the relationship.

The ROC Vendor Steering Committee comprises Executives from the Contractor as well as Executives associated with the ROC Program.

The following administrative matters relate to the ROC Vendor Steering Committee meeting:

a. Attendees:

   i. From the Customer: The Chief Information Officer (Sydney Trains), the General Manager of Strategic Procurement and the ROC Program Director. The following attendees report in to this meeting: Commercial Manager, ROC Program Stream Manager.

   ii. From the Contractor: The General Manager responsible for the account or appropriate "C" level Representative. The following attendees report in to this meeting: Project Director.

b. Agenda: The Meeting Agenda of the ROC Vendor Steering Committee includes:

   i. Project update

   ii. Strategic direction of the ROC Program

   iii. Status of the relationship between the Parties

   iv. Project budget / incentive opportunities

   v. Future opportunities associated with the ROC Program and Sydney Trains in general

   vi. Escalated risk raised by the Management Committee

c. Material: The following support document should be made available to the attendees of the ROC Vendor Steering Committee:

   i. Meeting Agenda

   ii. Minutes of previous meetings

   iii. Joint DRICA ("A" and "B" risks only)

d. Meeting Minutes: Minutes shall be taken by the Contractor and socialised with attendees within 48 hours of the end of the meeting

e. Frequency: ROC Vendor Steering Committee Meetings shall be held monthly.

5.3 Multi-Vendor Management Committee

The Multi-Vendor Management Committee deals with governance between all Parties to the ROC Program and as a consequence, expressly excludes discussions relating to commercial matters of any party: e.g. Contractors financial affairs, product strategic direction, IP etc.

The Multi-Vendor Management Meeting is the forum to review, discuss and provide recommendations on technology, performance and relationship improvements for continual service improvement (CSI).

The Multi-Vendor Management Meeting should be held quarterly unless ad hoc meetings are required.

In order to resolve issues or disputes, attendees at the Multi-Vendor Management Meeting should not be those whom attend the Vendor Management Meeting.

The following administrative matters relate to the Sydney Trains & System Integrator:

a. Attendees:
   i. From the Customer: The ROC Program Director, ROC Program Stream Manager and Commercial Manager.
   ii. From the Contractor: The Senior Account Manager and Program Director
b. Agenda: the Multi-Vendor Management Committee Agenda includes:
   i. Project status and update
   ii. Schedule Management
   iii. Relationship Management
   iv. Proposed efficiencies / business improvement
   v. Future scope opportunities associated with the ROC Program
   vi. Escalated risk raised by the Governance Meeting
   vii. General business
c. Material: The following support document should be made available to the attendees of the Multi-Vendor Management Committee:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. Joint DRICA ("A" and "B" risk only)
d. Meeting Minutes: Minutes shall be taken by the Contractor and socialised with the Customer's attendees within 48 hours of the end of the meeting
e. Frequency: the Multi-Vendor Management Meeting is to meet quarterly.

5.4 Management Committee (Individual Contractors)

The Management Committee (Individual Contractors) conducts governance on a managerial level and is primarily focused on ensuring vendor performance, relationship management and commercial performance, including change requests, invoices, service credits and incentives.

The Management Committee (Individual Contractors) should be held monthly unless ad hoc meetings are required.

In order to resolve issues or disputes, attendees at the Management Committee (Individual Contractors) should not be those whom attend the Vendor Management Meeting.

The following administrative matters relate to the Management Committee (Individual Contractors):

a. Attendees:
   i. From the Customer: The ROC Technology Program Manager and Commercial Manager. The following attendees report in to this meeting: ROC Release Project Managers.
   ii. From the Contractor: The Senior Account Manager and Program Director. The following attendees report in to this meeting: Contractor Release Project Managers.
b. Agenda: the Management Committee (Individual Contractors) Agenda includes:
   i. Project status and update
   ii. Schedule Management
   iii. Commercial Management
   iv. Relationship Management

v. Proposed efficiencies / business improvement

vi. Future scope opportunities associated with the ROC Program

vii. Escalated risks raised by the Multi-Vendor Management Meeting

viii. General business

c. Material: The following support documents should be made available to the attendees of the Management Committee (Individual Contractors):

i. Meeting Agenda

ii. Minutes of previous meetings

iii. Project Status Update Pack

iv. Joint DRICA ("A" and "B" risks only).

d. Meeting Minutes: Minutes shall be taken by the ROC PMO representative and socialised with the Customer's attendees within 48 hours of the end of the meeting

e. Frequency: the Management Committee (Individual Contractors) is to meet monthly

5.5 Vendor Management Meeting

The Vendor Management Meeting focuses on the overall service delivery of the Contractor and Other Contractors. Meetings should be held weekly to ensure the Project remains focussed on the critical path, and address matters such as delinquency of performance or differing interpretations of the Contractors obligations, progression of the relative ROC Release, service delivery, quality, issue clarification and resolution etc. Where these cannot be resolved to the mutual satisfaction of the Parties, the issue should be escalated to the Management Committee.

Vendor Management Meetings should be conducted by the Project Managers. Items to be discussed include: progression of the relative stream, service delivery, quality, issue clarification and resolution etc.

No commercial matters are discussed at this level due to the involvement of a number of different vendors.

The Vendor Management Meeting is the first level of management oversight of the ROC Program and should be conducted in separate Release streams to reflect the unique roles of the Individual Contractors.

The following administrative matters relate to the Vendor Management Meeting:

a. Attendees:

i. From the Customer: the relative ROC Release Project Manager, Technology Architect or nominated delegate

ii. From the Contractor: Release Project Manager, Project Coordinator and nominated technology SME

b. Agenda: The following items should be, as a minimum, on the agenda for each meeting:

i. Performance against the schedule

ii. Proposed scope changes

iii. Deliverable status, including acceptances

iv. Resource planning

v. Customer's CSI compliance

vi. Risks and Issues

vii. Escalation points for Management Committee Meeting

c. Material: The following support documents should be made available to the attendees of the Vendor Management meeting:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. Project Highlight Report
   iv. Risk and Issues derived from the Risk and Issues Register

d. Meeting minutes: Minutes shall be taken by the Contractor and socialised with the attendees within 48 hours of the end of the meeting

e. Frequency: Vendor Management Meetings shall be held weekly.

5.6 Technology and Risk Management Meeting

The Technology and Risk Management Meeting is the forum to discuss and provide recommendations on IT architecture, standards, and all aspects of risk management and IT security

The following administrative matters relate to the Technology and Risk Management Meeting:

a. Attendees:
   i. The Customer: ROC Technology Lead Architect, Technology Program Manager, ROC Release Architect and relative Release SME's as required
   ii. The Contractor and Other Contractors: Program Director, Release Architect and relevant SME's.

b. Agenda: The following items should be, as a minimum, on the agenda for each meeting:
   i. Review and propose technology directions, standards and architecture
   ii. Discuss and approve new and innovative services proposed by the Contractor
   iii. Discuss and review cross-vendor technology issues
   iv. Review impact of introducing applications into the legacy environment
   v. Propose changes to architecture and IT standards for approval by the Customer's architecture team
   vi. Review any proposals for reductions in the costs of the Services driven by new technology
   vii. Explore and understand innovations in technology that could enable business benefit for the Customer
   viii. Proactively propose, describe and plan innovation initiatives and provide innovation project recommendations to the Executive Level
   ix. Align security architecture, policy and operations
   x. Plan, review and monitor joint security initiatives and requirements
   xi. Evaluate risk management issues including both actual risks and contingencies
   xii. Evaluate recommendations in regard to proactive measures and remediation
   xiii. On request from the ROC Vendor Steering Committee investigate opportunities for innovation or other special tasks within that area
   xiv. Resolve any issues promptly and escalate if necessary in accordance with Section (Issue Escalation Process) in this schedule

c. Material:
   i. Product roadmap and plan
   ii. Proposed changes on architecture and application landscape
   iii. Report of innovation in technology
   iv. DRICA
d. Minutes: PMO Coordinator
e. Frequency: The Technology and Risk Management Meeting should be held quarterly unless otherwise agreed between the Parties.

5.7 Operational Meetings

The Operational Meetings are ad hoc meetings held between the relevant Parties to assess technology specific issues: e.g. testing, availability and configuration of environments, security, integration, configuration and customisation issues, etc.

Attendees are the SME's and, depending on the nature of the issue being discussed, may also require the involvement of the Release Project Managers and other key personnel.

No commercial matters are discussed at this level as attendees are not involved in financial / contractual management.

5.8 Project Management Forum

The Project Management Forum Meetings are meetings held fortnightly between the ROC Technology and Contractor Release Project Managers. This meeting is a discussion forum for the project managers on the ROC Technology Program to share understanding and issues and ensure alignment of project management activities across the Program.

a. Attendees:
   i. From the Customer: The ROC Technology Release Project Mangers
   ii. From the Contractor and Other Contractors: Release Project Managers
b. Agenda includes:
   i. Master Schedule overall
   ii. Potential blockers, emerging issues, threats
   iii. Relationship Management
   iv. Lessons learnt, good practice share
   v. Collegiate advice
   vi. Future horizon planning
d. Material: The material is as required to support the subjects being discussed
e. Meeting Minutes: There are no minutes however action items are taken and distributed
f. Frequency: fortnightly.

6 Governance Structure (Technical Governance)

6.1 Contractor (SI) and Other Contractors

6.1.1 The Contractor (SI) is the Customer's agent responsible for delivering the ROC Solution. Technical Governance between the Contractor and Other Contractors, as well as the Contractor and the Customer is as described in the following diagram.

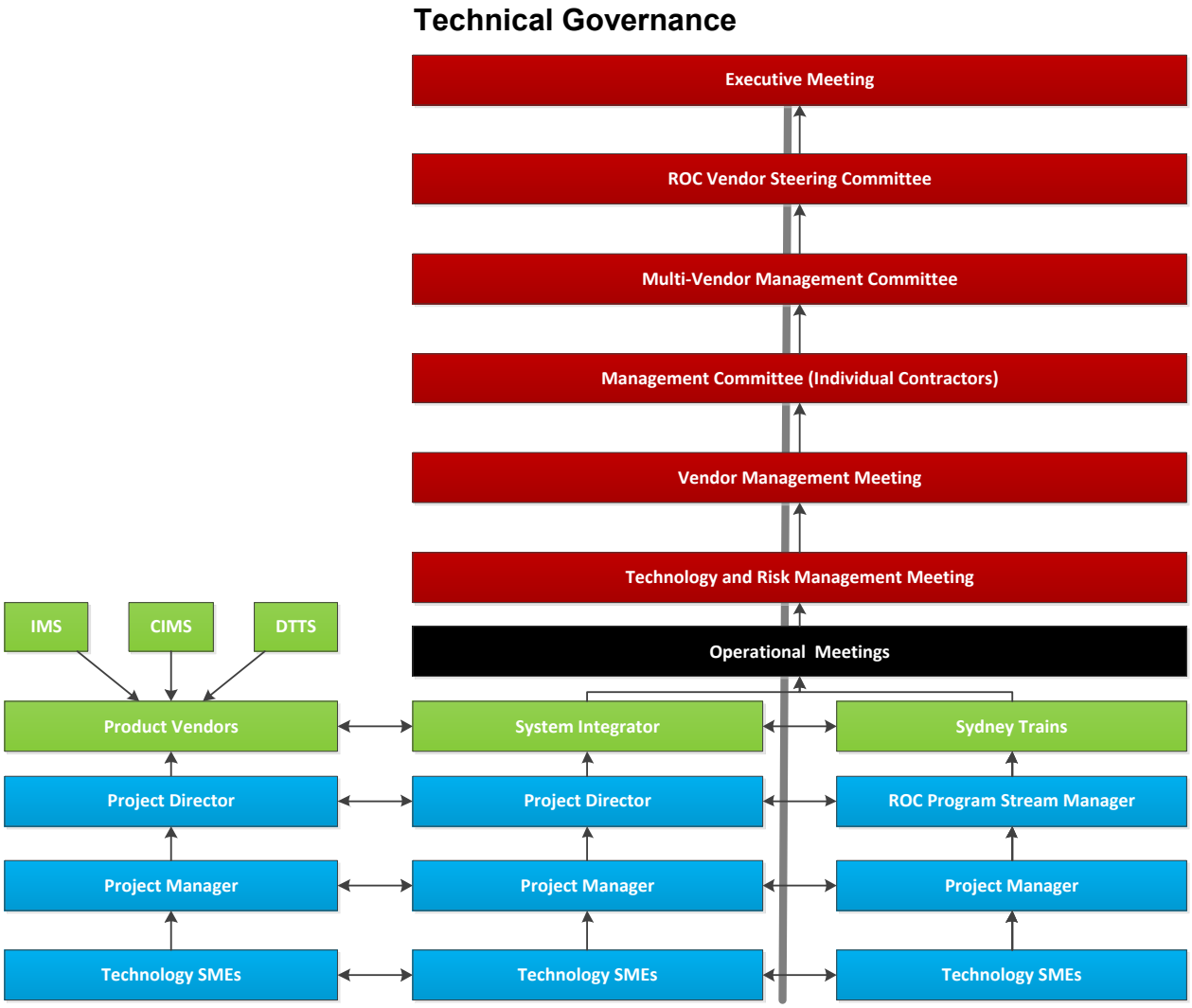

Diagram 1: ROC Technical Governance Diagram

Colour coding for the diagram above:

a. Red cells identify the relevant meetings in order of descending significance

b. Black cell is not subject to the formal governance process but included by reference in this document.

c. Green cells identify the relevant organisation

d. Blue cells identify the relevant role within the organisations.

6.1.2 The vertical cells establish the logical workflow between the Contractor and the Other Contractors, as well as the Contractor and the Customer.

6.1.3 The horizontal cells establish technical counterparts in increasing levels of significance.

6.1.4 The delineation of responsibility is exhibited by the black line between the Customer and Contractor. The purpose is expressly designed to provide a visual representation of the Systems Integrator model engagement.

6.1.5 This is reinforced by the fixed engagement lines between the Contractor and Other Contractors technical counterparts, and the line between the Contractors and the Customers technical counterparts. This serves to demonstrate that the Contractor may directly engage the Customers technical personnel during the program, however the technical relationship for product vendors only extends to the Contractor.

7 Governance Structure (Commercial Governance)

7.1 Commercial Governance

7.1.1 While the Contractor (Systems Integrator) is the Customer's agent responsible for delivering the ROC Solution, commercial matters are expressly excluded from the scope of managing the Other Contractors in order to ensure confidentiality of the Other Contractors' commercial affairs.

7.1.2 Commercial Governance between the Parties is therefore dealt with individually between the Customer, the Contractor and the Other Contractors as illustrated in the following diagram.

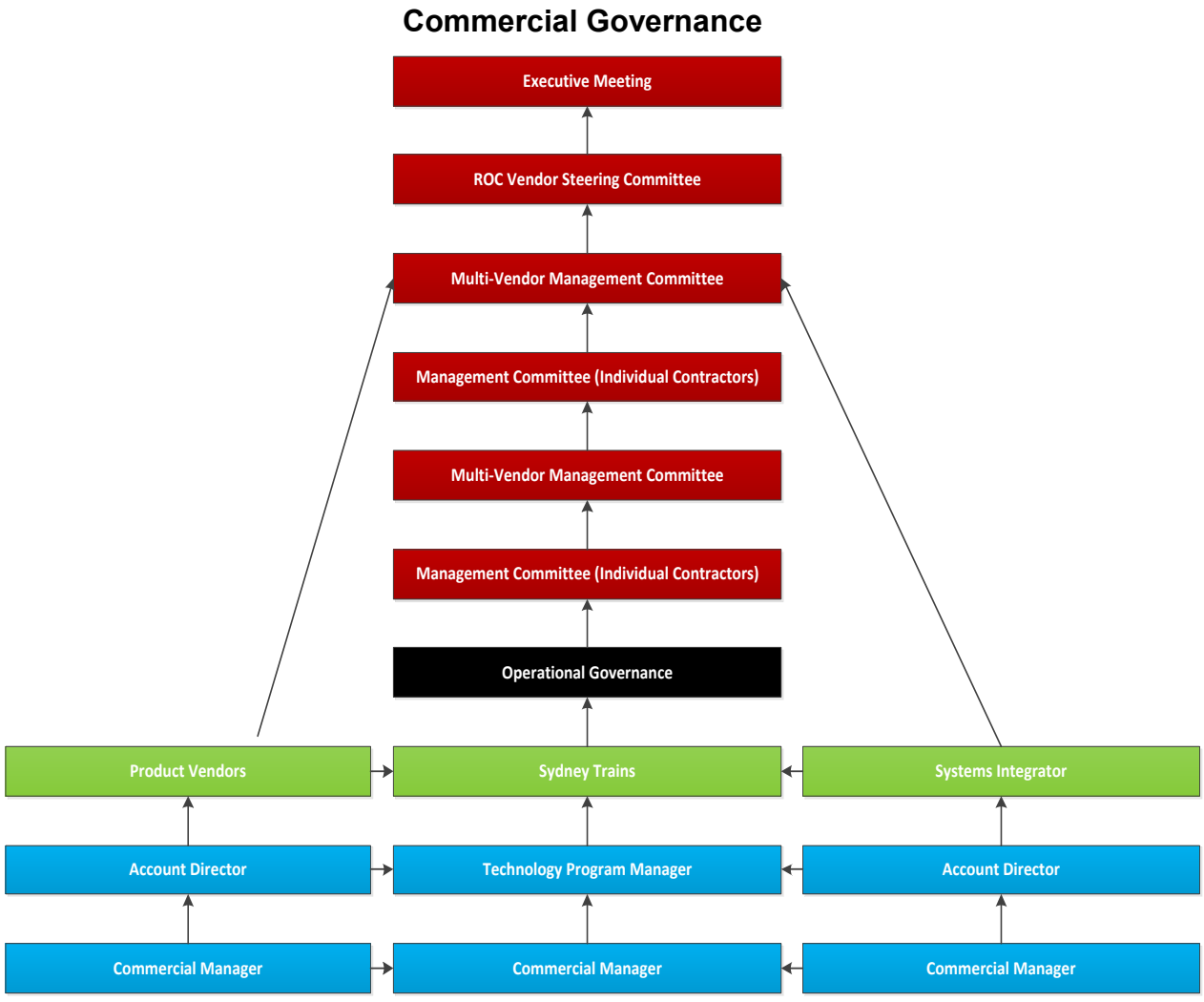

Diagram 2: ROC Commercial Governance Diagram

7.1.3 Colour coding for the diagram above:

a. Red cells identify the relevant meetings in order of descending significance
b. Black cells are not relevant to Commercial Governance
c. Green cells identify the relevant organisation
d. Blue cells identify the relevant role within the organisations.

7.1.4 The vertical cells establish the logical workflow within the relevant organisation. Note the separation of the Contractor and the Other Contractors.

7.1.5 The horizontal cells establish commercial counterparts between the Other Contractor and the Customer and the Contractor and the Customer.

7.1.6 Commercial discussions bypass the operational meeting and vendor management meeting as these involve non-commercial attendees.

7.1.7 Discussions relating to commercial issues should occur at the Management Meeting as:

a. Meetings are between the Customer and individual contractors to ensure confidentiality of their information.

b. The absence of other Contractors promotes an open and frank exchange of views between the parties, including highlighting any issues any Contractor may have with another Contractor.

8 Contractor's Key Roles in the Governance Structure

8.1 Overview

The Contractor shall provide the following key roles in the joint governance structure:

a. Managing Director

b. General Manager

c. Account Executive / Client Relationship Manager

d. Service Delivery Manager / Project Director

e. Account Executive / Client Relationship Manager

f. Commercial Manager

g. Project Manager

h. Lead Solution Architect.

The primary governance-related responsibilities for each key role are specified in sub-section "Key Roles and Responsibilities".

The Contractor shall appoint an individual for each of the roles above and one individual may not fulfil more than three of the roles above.

8.2 Key Roles and Responsibilities

8.2.1 Managing Director

The Contractor's Managing Director is responsible for all facets of the Contractor's performance, including service delivery, relationship management and finances. The Managing Director interfaces with the Customer's CIO.

8.2.2 General Manager

The Contractor's General Manager is responsible for the overall management of the relationship at the strategic and executive level as well as leadership of the service delivery team. The General Manager interfaces with the Customer's Program Director.

8.2.3 Account Executive / Client Relationship Manager

The Contractor's Account Executive will be responsible for the overall engagement with the Customer under this Agreement. The Account Executive will be the single point of accountability for the account and for all of the Services. The Account Executive works with the Customer's Technology Program Manager to align the delivery of Services with the strategic needs of the Customer, with focuses on performance, charges and contractual matters. The primary governance-related responsibilities of the Account Executive are:

a. Management of the executive relationship between the Contractor and the Customer

b. Management of the Contractor's delivery teams

c. Ensuring a successful relationship with the Customer

d. Overseeing that all performance requirements are satisfied as agreed in this Agreement

e. Ensuring proper invoicing and payments between the Contractor and the Customer

f. Overseeing all contractual related matters, e.g. change of service levels, etc.

g. Ensuring that the Contractor fulfils all of its obligations under this Agreement

h. Overseeing and being responsible for the successful completion of transition required to provide Services in this Agreement

i. Participating in the Customer's strategic planning process and developing recommendations and plans that support the Customer's strategic direction

j. Informing the Customer about relevant new corporate capabilities and developments within the Contractor's organisation and proposing ideas and solutions that may contribute to Continuous Improvement

k. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document.

8.2.4 Service Delivery Manager / Project Director

The Contractor's Service Delivery Manager has the overall responsibility of delivering the Services. The Service Delivery Manager works with the Customer's Technology Program Manager to manage and meet commitments, requirements and expectations regarding overall delivery, including scope and demand within the scope of the Services. The primary governance-related responsibilities of the Service Delivery Manager consist of:

a. Providing overall leadership and management of the Service delivery teams

b. Interfacing with and supporting the Customer organisation, which contributes to building a successful relationship between the Customer and the Contractor

c. Responsible for the appropriateness, quality and timeliness of all defined scope of Services and transition, and ensuring overall management of inter-service dependencies and issues

d. Monitoring and measuring of the Services from the Contractor to the Customer

e. Ensuring end-to-end responsibility of Maintenance, Service Request, and Enhancement activities to be delivered and/or maintained by the Contractor.

8.2.5 Account Manager / Client Relationship Manager

The Account Manager has primary responsibility for the administration and management of the Contractor's contractual compliance with the Agreement. The primary governance-related responsibilities of the Account Manager consist of:

a. Establishing and executing all required account and business management processes and associated reporting to meet the Customer's expectations

b. Ensuring that a log is updated and shared with the Customer containing names and contact information of personnel holding roles set forth in the PIPP.

c. Informing the Customer of important changes in the Contractor's resources that may have a material effect on the Services

d. Assisting the Account Executive in the resolution of contract disputes

e. Managing contracts and modifications, resolving all issues affecting the Services compliance

f. Ensuring the Contractor's fulfilment of its obligations under this Agreement;

g. Ensuring satisfaction of legal requirements

h. Advising management of contractual rights and obligations

i. Reviewing and facilitating the Contractor's approval of all contractual documents

j. Working with other relevant the Customer teams to ensure contractual requirements are met, including documentation and management of Service Levels

k. Providing information to the Customer as appropriate to facilitate the Customer understanding of the Contractor's new capabilities relevant to the Services

l. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document.

8.2.6 Commercial Manager

The Contractor's Commercial Manager has the overall accountability of the Contractor's contractual compliance with the Agreement. The primary governance-related responsibilities of the Commercial Manager consist of:

a. Working with the Customer's Commercial Manager to prepare, approve, and execute contract change orders, amendments, and modifications

b. Maintaining and updating issues and open actions log in order to track and facilitate resolution of all contractual issues and actions; performing escalations as required

c. Assisting in the contractual management of all new service offerings and related new Customer requirements so that they are properly reviewed, approved, executed, and integrated into the Agreement in accordance with the Contract Change Control Procedure in Schedule 3 of the General Order Form.

d. Maintaining an index of the pertinent parts of the Agreement, modifications and business agreements, contract correspondence and letters, and other agreed information and documentation pertinent to the Agreement

e. Managing contracts and modifications, resolving all issues affecting the Services compliance; ensuring the Contractor's fulfilment of its obligations under this Agreement; ensuring satisfaction of legal requirements; advising management of contractual rights and obligations

f. Run benchmarking exercises in cooperation with the Customer's Contract Manager (discretionary/infrequent activity).

8.2.7 Project Manager

The Contractor's Project Manager has the overall accountability of the performance of the Project team for the day-to-day running and delivery of the Project. The primary governance-related responsibilities of the Project Manager consist of:

a. Working with the Customer's Project Manager to ensure smooth day-to-day running and delivery of the Project

b. Managing project deliverables to schedule and budget, identify risks and mitigation strategies and report as required

c. Single point of contact to vendors for delivery including escalation point.

8.2.8 Lead Solution Architect

The Contractor's Lead Solution Architect has the overall responsibility and accountability of the architectural design of the ROC technology solution. The primary governance-related responsibilities of the Lead Solution Architect consist of:

a. Working with the Customer's ROC Technology Lead Architect to ensure a consistent approach to architectural design of the Technology component of the ROC Program

b. Working with and guiding the Contractor architects in defining the technology solution, specifically supporting the Solution and Integration Architects.

9 Customer's Key Roles in the Governance Structure

9.1 Overview

The Customer shall fulfil the following six key roles in the joint governance structure for the purpose of providing Services as per this Agreement:

a. Chief Information Officer

b. ROC Program Director

c. Technology Program Manager

d. ROC Technology Lead Architect

e. Commercial Manager

f. Release Project Manager

Each role can be conducted by one or divided into a small number of individuals. The Customer can decide if an individual shall conduct more than one role.

The primary governance-related responsibility for each key role is specified in Section "Key Roles and Responsibilities".

9.2 Key Roles and Responsibilities

9.2.1 Chief Information Officer

The Chief Information Officer is responsible for representing the Customer at Executive Meetings. The Chief Information Officer's key focus is on the strategic relationship with the Contractors in order to ensure the ROC Technical Solution is implemented in accordance with the Customers' operational and budgetary requirements.

9.2.2 ROC Program Director

The Customer Program Director is equivalent to the Contractor's General Manager and responsible at the strategic and executive level for management of the relationship. The Program Director shall:

a. Provide executive sponsorship of the strategic relationship

b. Communicate the Customer's IT strategy to the Contractor. c. Provide direction and leadership to the ROC Program's Stream Leads

9.2.3 Technology Program Manager

The Technology Program Manager is responsible for overseeing the delivery of Services by the Contractor. The primary governance-related responsibilities of the Technology Program Manager include:

a. Interacting with the Contractor's Account Executive

b. Providing management support and guidance to the Customer's governance organisation including removing obstacles that impede success in a timely manner

c. Where applicable, approving Service Credit and Incentive settlement. Approving and authorising the Contractor's invoices to the Customer

e. Ensuring the Customer meets agreed-upon deadlines

f. Providing strategic dispute resolution

g. Acting as the single point of contact for business users and gatekeepers for requests from business units

h. Supporting business units in clarification of ROC technology related issues

i. Working with the Contractor's Account Executive to revise scope of Services as required by the ROC Program

j. Reviewing key Risks and Issues

k. Approving prioritisation of Service Requests and Enhancements if needed.

9.2.4 ROC Technology Lead Architect

The ROC Technology Lead Architect is responsible and accountable for overseeing one or more Technology streams in the Project. The primary governance-related responsibilities of the ROC Technology Lead Architect include:

a. Working with the Contractor's Lead Solution Architect to ensure a consistent approach to architectural design of the Technology component of the ROC Program

b. Working with and guiding the Customer architects in defining the technology solution, specifically supporting the architects on the project: Solution, Infrastructure and Data Architects.

9.2.5 Commercial Manager

The Customer Commercial Manager has the primary responsibility for managing the commercial relationship, monitoring the Contractor's commercial performance against the Agreement and ensuring contract compliance. The Customer Commercial Manager shall work with the Contractor's Account Manager and Commercial Manager to achieve the goals and objectives of the contract regarding vendor management. The primary governance-related responsibilities of the Contract Manager include:

a. Interfacing with the Contractor's Account Manager and the Contractor's Commercial Manager counterpart

b. Extracting contract terms, Service Levels, and performance metrics that will be monitored and reported

c. Establishing the Customer's contract governance policies, procedures, tools, and templates

d. Ensuring internal stakeholder and the Contractor's awareness of and compliance with the Customer's contract governance framework

e. Regularly reviewing the Contractor's performance against the Agreement

f. Ensuring receipt of all reports from the Contractor as agreed in the Agreement.

g. Ensuring that a log is at all times updated and shared with the Contractor containing names and contact information of the Customer personnel holding contractual roles set forth in this schedule

h. Participating in negotiations for updates to the Agreement

i. Performing compliance oversight and review of the contractual elements defined in the Agreement, working with the Customer management and others to address and resolve compliance issues

j. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document

k. Review invoices and resolve any charge related issues with the Contractor's Account Manager

l. Coordinate benchmarking exercises (discretionary/infrequent activity)

m. Drafting amendments to the Agreement, including socialisation with the relevant internal and Contractor stakeholders.

n. Ensure approval of contracts and amendments in accordance with the Customer's policies and procedures, applicable laws, the Customer requirements in accordance with the Contract Change Control Procedure of Schedule 3 of the General Order Form

o. Reviewing the Contractor's performance to contract regarding Service Levels, Service Level Credits and any Service Level rebates.

9.2.6 Release Project Manager

The Customer Release Project Manager is responsible for the day-to-day running of the Customer side of the Project and for overseeing the delivery of the Project by the ROC Program Streams and the Contractor. The primary governance-related responsibilities of the Project Manager include:

a. Interacting with the Contractor's Project Manager

b. Providing management support and guidance to the Customer's governance organisation including removing obstacles that impede success in a timely manner

c. Ensuring the Customer meets agreed-upon deadlines at the Project level

d. Working with the Contractor's Project Manager to manage scope, schedule and budget

e. Identify Risks and mitigation strategies.

10 Issue Escalation Process

10.1 General

10.1.1 The Parties agree to implement and adhere to a defined escalation process for issues that arise regarding management of service delivery issues and the overall governance of the relationship.

10.1.2 Prior to a Party initiating the Escalation Process, the Parties should ensure all reasonable endeavours are undertaken to resolve the Issue at the technical level between the Contractor and the Customer's personnel, or between the Contractor and Other Contractor's technical-level personnel.

10.1.3 In the event that an Issue involves an Other Contractor, and is of a specific commercial nature, the escalation path should exclude the Contractor (System Integrator).

10.1.4 The Parties shall resolve issues in a constructive way that reflects the concerns and commercial interests of each Party. The Parties' primary objective and intent is to ensure that sufficient effort is made to have issues resolved by the appropriate levels of authority as soon as possible without the need for escalation.

10.1.5 In the event the Parties cannot reach a resolution of an issue at a given level, the Parties shall follow the Escalation Procedures, in terms of Notification, Documentation, and Request for Meeting, Escalation Path, and Issue Review as set forth in Section "Escalation Path".

10.2 Escalation Procedures

10.2.1 Notification

a. Either Party may decide that escalation is desirable when resolution of an issue appears unachievable at the current management level. In that event, the Party desiring escalation provides written notice of its intention to the member(s) of the other Party currently involved in the dispute.

b. At either Party's request, the Parties currently engaged in attempting to resolve the issue shall meet again to attempt resolution of the issue prior to escalation to the next level. When and if the issue cannot be resolved at the current management level, the issue will then be escalated after good faith attempts by the Parties to resolve the issue at the current level. However, at any time five days or more after an issue has been escalated to one of the levels in Section "Issue Escalation Path", a Party may, by notice to the other party, escalate it to the subsequent level.

10.2.2 Documentation

a. The Parties will jointly develop a short briefing document called Statement of Issue for Escalation that describes the issue, relevant impact and positions of the Parties. – Imola to check with Bon whether a separate document template is required for this "Statement of Issue for Escalation"; Kelly had provided an example template to use, should Bob wish to review that (raised by Kelly since this item is referenced in capitals).

b. Documentation shall be prepared with the sufficient basis for an appropriate consideration and conclusion.

10.2.3 Request for Meeting

a. A meeting will be scheduled with appropriate individuals with written notice. Parties will endeavour to meet as soon as possible, however no more than five (5) days from notification.

b. The Statement of Issue for Escalation will be sent in advance to the participants.

10.2.4 Escalation Path

The following diagrams depict the escalation paths based on the nature of the engagement with the Contractor. These are:

a. Systems Integrator and the Customer; and

b. Systems Integrator and the Other Contractors.

System Integrator (Contractor) / Sydney Trains (Customer) Escalation Path

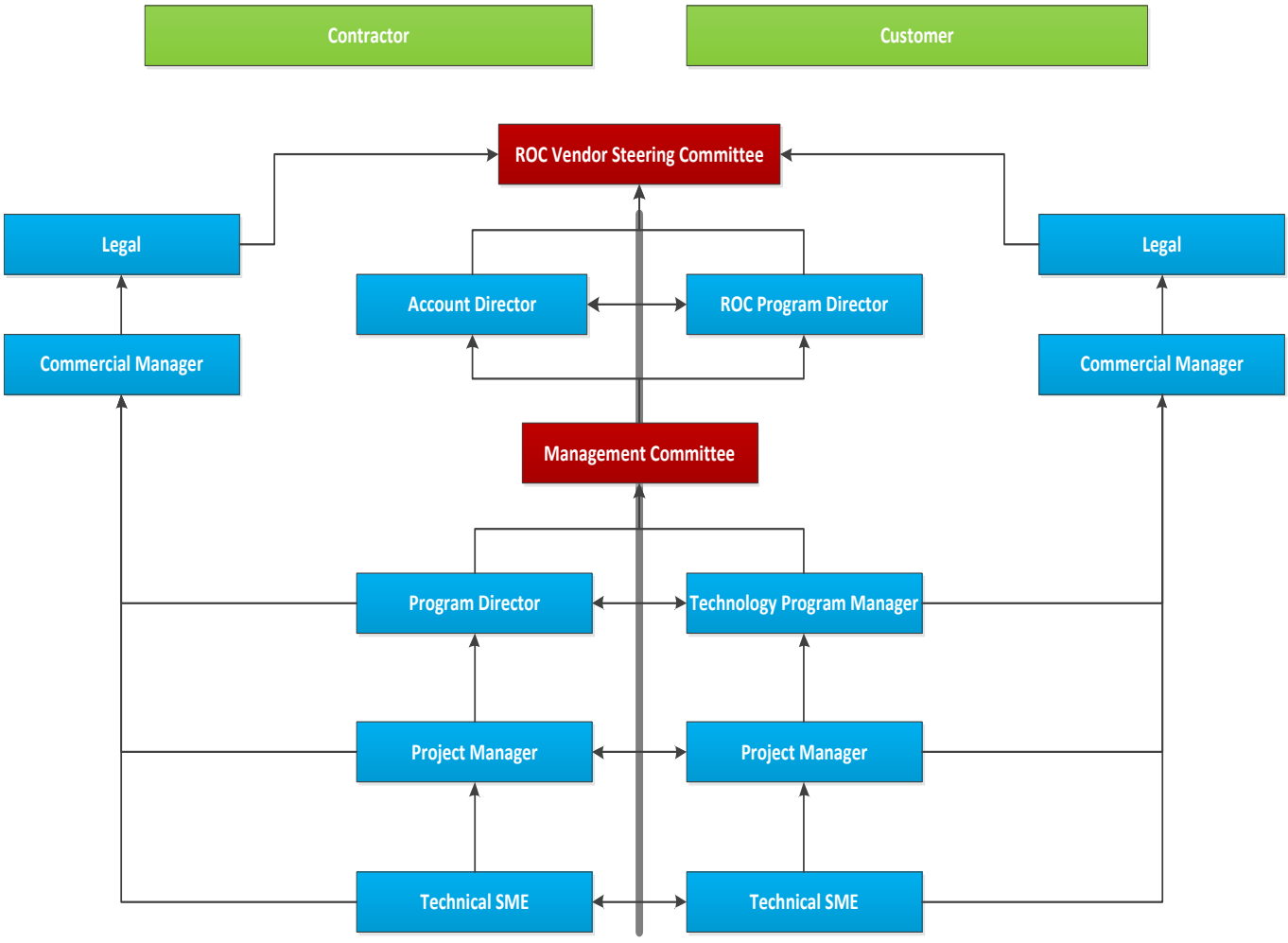

Diagram 3: System Integrator ("Contractor") / Sydney Trains Escalation Path Diagram

Systems Integrator (Contractor) / Vendor (Other Contractor) Dispute Escalation Path

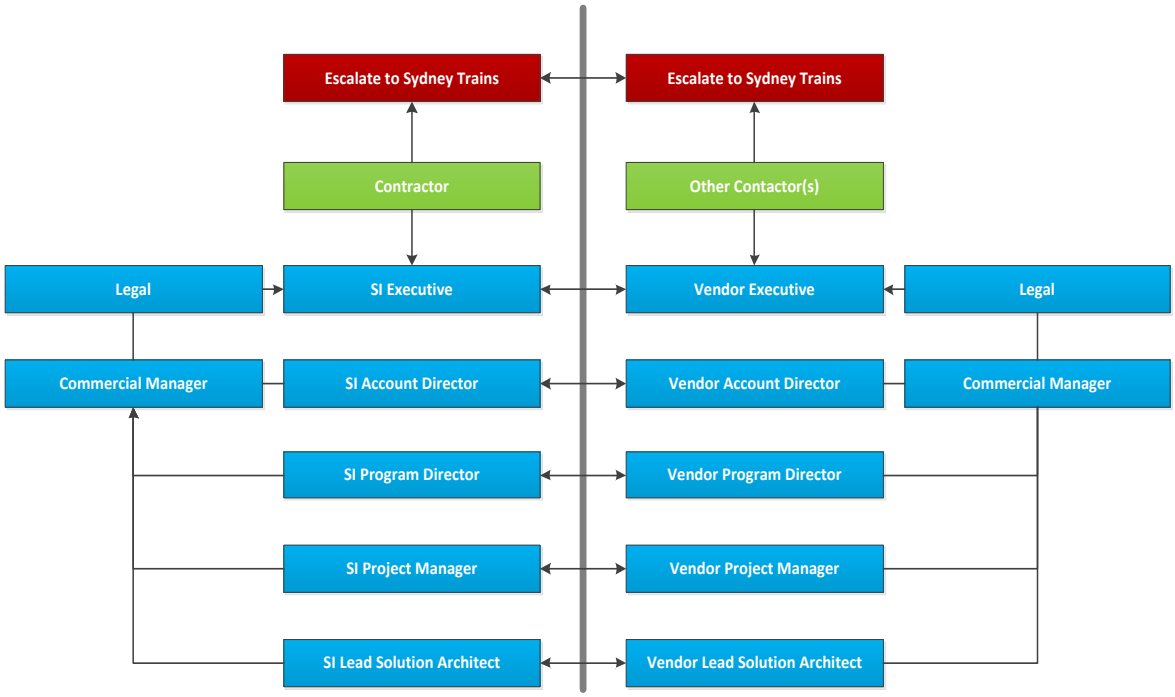

Diagram 4: Systems Integrator (Contractor) / Vendor (Other Contractor) Dispute Escalation Path

10.2.5 Issue Review

Each individual manager and process owner shall try to resolve any issues with their counterpart. If no agreement is made, the Parties should follow, wherever practicable, the above escalation path which attempts to resolve the issue at the counterpart level. From individual manager and process owner there are the following forums.

10.2.6 Technical Level

Wherever practicable, issues should be resolved at the technical level prior to escalation to the Vendor Management Meeting. The exception to the rule is instances where the discussion has the potential to have a quality, schedule or commercial impact. The following should be considered:

a. Is it a technological issue related to the Contractor's product or their performance?

b. Has the Customer contributed to the issue in terms of non-performance, delays in providing CSI, or failure to manage 3rd parties?

c. Is the Issue attributable to limitations of the Customer's technological environment?

d. If the issue cannot be resolved, it shall be treated according to the following contractual profile:

   i. Technological or delivery related issues should be escalated to the Vendor Management Meeting

   ii. Matters of a Commercial nature should be escalated to the Management Committee meeting.

10.2.7 Vendor Management Meeting

Escalation to the Vendor Management Meeting is only appropriate if the Parties have exhausted all options at the Technical level. Attendees at the Vendor Management Meeting shall investigate the issue and make their determination based on, but not limited to, the following considerations:

a. Is the issue attributable to lack of clarity of scope?

b. Was the issue a foreseeable event?

c. Is it a technological issue related to the Contractor's product or their performance?

d. Has the Customer contributed to the issue, in terms of performance, or technological limitations?

10.2.8 Management Committee Meeting

The Management Committee Meeting is the forum to discuss commercial issues escalated by a Party. Attendees at the Management Committee Meeting shall investigate the issue and make their determination based on, but not limited to, the following considerations:

a. Is the issue attributable to lack of clarity of scope?

b. Is this a technological issue?

c. Does the Contract support a particular Contractor's position?

d. Was the issue a foreseeable event?

e. Does the issue relate to partial or substandard performance by the Contractor and/or the Customer?

f. Has the Customer provided all necessary assistance, information, etc. to enable the Contractor to perform their work?

g. Has an Other Contractor contributed to the issue?

If the issue cannot be resolved, it shall be escalated to the ROC Vendor Steering Committee for final determination.

10.2.9 ROC Vendor Steering Committee

The ROC Vendor Steering Committee is the forum to discuss all outstanding technological, relationship or commercial issues escalated by the Management Committee Meeting. Unless it is unequivocal as to which party bares sole responsibility for an issue, the attendees' focus at the ROC Vendor Steering Committee should be to attempt to resolve the matter in a way that is conducive to the commercial interests of all Parties.

10.2.10 Issue Documentation after Resolution

a. Resolution of an issue must be documented and executed as a statement of fact. The documentation should additionally identify what further actions will be required to prevent reoccurrence: for example, changes in processes, contract variation etc.

b. Copies of the Issue Documentation must be retained in the shared document repository.

10.3 ROC Culture and Behaviours

The ROC Program adheres to the following meeting rules or "etiquette"[1]:

ROC Culture and Behaviors	
Meeting Etiquette **...** *ensuring meetings are efficient, collaborative & innovative*	
You should expect …	**You should challenge …**
An agenda and purpose for the meeting should be clear in the invitation (plus any pre-reading if possible).	Meetings without precise purpose and direction which linger and do not achieve an outcome.
Meetings invitations to be sent and responded to in good time.	People tentatively accepting or declining a meeting invitation without providing a reason.
Scheduled breaks for longer meetings, so e-mails and phone messages can be checked.	People 'reading under the table', scrolling through emails, texting, internet surfing, etc... ***Note**: if this happens, perhaps the meeting is not focused enough, or the wrong people are there*
People arriving early so meeting can start on time.	People arriving late, expecting others to brief them. ***Note**: if you miss part of the meeting, you lose your right to complain later about decisions made*
Mobile phones turned to silent. 'Only step out for extraordinary calls.	Use of mobile phones which distract meetings.
Comments to be held until the speaker finishes, however legitimate interjections and clarifications should be made appropriately.	Interruptions that are not constructive or on topic.
Being respectful of all inputs, feedbacks, opinions – even if they challenge the status quo.	Input that isn't made constructively.
People using 'I statements' to share their experiences with frank, honest and powerful words.	People starting statements with 'they', 'we', 'you', or otherwise trying to speak on behalf of groups not in the room.
A meeting to finish at least 5 mins before the allotted time; allowing others to get to next commitments on time	Meetings that extend past the time allotted or make you late for your next commitment.
Your Challenge: ***Can you achieve your objectives and reduce meeting time?***	

[1] Reference - Sydney Trains document: *ROC Meeting Etiquette Poster.docx*

11 Stakeholder Engagement Matrix

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
Meetings	**Executive Meeting**	The Executive meeting is the forum from which executives from Sydney Trains and the Systems Integrator discuss the progress of the project and potential future opportunities.	- CIO (Chairman) - General Manager (relative Business) - ROC Program Director (supports the CIO).	- CEO - CIO - Senior Account Manager, or "C" level representative	i. Resolution of risks and issues related to the overall relations between the Customer and the Contractor ii. Overall performance against business goals iii. Where applicable, revision of goals and long term plans for development of the relationship iv. Identify and discuss joint strategic business direction and opportunities v. As the highest level on the escalation path. Act as the ultimate point of joint dispute resolution.	i. Meeting Agenda ii. Minutes of previous meetings iii. ROC Vendor Executive Pack documenting contract performance iv. Recommendations as escalated from the ROC Vendor Steering Committee v. Critical Risk and Issues derived from the Risk and Issues Register vi. Decision log	Contractor 48 hours	Annually
	ROC Vendor Steering Committee	The ROC Vendor Steering Committee is the primary focal point for executive and strategic decisions, as well as the escalation point for resolution.	- CIO - GM Strategic Procurement - ROC Program Director The following report into this meeting: - Commercial Manager - ROC Program Stream Manager	- GM responsible for Account, or "C" level representative The following report into this meeting: - Project Director	i. Project update ii. Strategic direction of the ROC Program iii. Status of the relationship between the Parties iv. Project budget / incentive opportunities v. Future opportunities associated with the ROC Program and Sydney Trains in general vi. Escalated risk raised by the Management Committee	i. Meeting Agenda ii. Minutes of previous meetings iii. Joint DRICA ("A" and "B" risks only)	Contractor 48 hours	Monthly
	Multi-Vendor Management Committee	The Multi-Vendor Management Committee deals with governance between all Parties to the ROC Program and as a consequence, expressly excludes discussions relating to commercial matters of any party: e.g. Contractors financial affairs, product strategic direction, IP etc.	- ROC Program Director - Technology ROC Program Stream Manager - Commercial Manager NOTE: Attendees should not be Vendor Management Meeting attendees	- Senior Account Manager - Program Director NOTE: Attendees should not be Vendor Management Meeting attendees	i. Project status and update ii. Schedule Management iii. Relationship Management iv. Proposed efficiencies / business improvement v. Future scope opportunities associated with the ROC Program vi. Escalated risk raised by the Governance Meeting vii. General business	i. Meeting Agenda ii. Minutes of previous meetings iii. Joint DRICA ("A" and "B" risk only)	Contractor 48 hours	Quarterly / ad-hoc as required
	Management Committee (Individual Contractors)	The Management Committee (Individual Contractors) conducts governance on a managerial level and is primarily focused on ensuring vendor performance, relationship management and commercial performance, including change requests, invoices, service credits and incentives.	- ROC Program Director - ROC Program Stream Manager - Commercial Manager NOTE: ROC Release Project Managers (reports into this meeting)	- Senior Account Manager - Program Director NOTE: Contractor Release Project	i. Project status and update ii. Schedule Management iii. Commercial Management iv. Relationship Management v. Proposed efficiencies / business improvement vi. Future scope opportunities associated with the ROC Program vii. Escalated risks raised by the Multi-Vendor Management Meeting viii. General business	i. Meeting Agenda ii. Minutes of previous meetings iii. Project Status Update Pack iv. Joint DRICA ("A" and "B" risks only)	PMO Representative 48 Hours	Monthly

Communication Plan

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
				Managers (reports into this meeting)	All of the above is included in a pack with the status update and prepared by the vendor			
	Vendor Management Meeting	The Vendor Management Meeting focuses on the overall service delivery of the Contractor and Other Contractors. Vendor Management Meetings should be conducted by the Project Managers. Issues to be discussed include: progression of the relative stream, service delivery, quality, issue clarification and resolution etc. No commercial matters are discussed at this level due to the involvement of a number of different vendors.	- ROC Release Project Manager (relative) - Technology Architect or nominated delegate	- Release Project Manager - Project Coordinator - Nominated technology SME	i. Performance against the schedule ii. Proposed scope changes iii. Deliverable status, including acceptances iv. Resource planning v. Customers CSI compliance vi. Risks and Issues vii. Escalation points for Management Committee Meeting	i. Meeting Agenda ii. Minutes of previous meetings iii. Project Highlight Report iv. Risk and Issues derived from the Risk and Issues Register	Contractor 48 hours	Weekly
	Technology and Risk Management Meeting	The Technology and Risk Management Meeting is the forum to discuss and provide recommendations on IT architecture, standards, and all aspects of risk management and IT security.	- ROC Technology Lead Architect - Technology Program Manager - ROC Release Architect - Relevant Release SMEs	- Program Director - ROC Release Architect - Relevant SMEs	i. Review and propose technology directions, standards and architecture ii. Discuss and approve new and innovative services proposed by the Contractor iii. Discuss and review cross-vendor technology issues iv. Review impact of introducing applications into the legacy environment v. Propose changes to architecture and IT standards for approval by the Customer's architecture team vi. Review any proposals for reductions in the costs of the Services driven by new technology vii. Explore and understand innovations in technology that could enable business benefit for the Customer viii. Proactively propose, describe and plan innovation initiatives and provide innovation project recommendations to the Executive Level ix. Align security architecture, policy and operations x. Plan, review and monitor joint security initiatives and requirements xi. Evaluate risk management issues including both actual risks and contingencies xii. Evaluate recommendations in regard to proactive measures and remediation xiii. On request from the ROC Vendor Steering Committee investigate opportunities for innovation or other special tasks within that area xiv. Resolve any issues promptly and escalate if necessary in accordance with Section (Issue Escalation Process) in this schedule	i. Product roadmap and plan ii. Proposed changes on architecture and application landscape iii. Report of innovation in technology iv. DRICA	PMO Coordinator	Quarterly
	Operational Meetings	The Operational Meetings are ad hoc meetings held between the relevant Parties to assess technology specific issues: e.g. testing, availability and configuration of environments, security,	- Relevant SME's - Release Project Managers (o) - other key personnel (o)	- Relevant SME's - Release Project Managers	As Required	As Required	There are no minutes however action items are taken and	As required

Communication Plan

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
		integration, configuration and customisation issues, etc. Attendees are the SME's and, depending on the nature of the issue being discussed, may also require the involvement of the Release Project Managers and other key personnel. No commercial matters are discussed at this level as attendees are not involved in financial / contractual management.		(op.) - Other key personnel (op.)			distributed	
	Project Management Forum	The Project Management Forum Meetings are meetings held fortnightly between the ROC Technology and Contractor Release Project Managers. This meeting is a discussion forum for the project managers on the ROC Technology Program to share understanding and issues and ensure alignment of project management activities across the Program.	- ROC Technology Release Project Managers	- Release Project Managers	i Master Schedule overall ii. Potential blockers, emerging issues, threats iii. Relationship Management iv. Lessons learnt, good practice share v. Collegiate advice vi. Future horizon planning	The material is as required to support the subjects being discussed	There are no minutes however action items are taken and distributed	Fortnightly
Reports	**Project Highlight Report**	Generated weekly per ROC Release and contains: Key Indicators (Project RAG Status); Milestone, budget and overall project update with particular explanations of any amber or red items; PIPP Deliverable updates; DRICA updates; Change Requests/updates & Action Items	- ROC Technology Program Manager - ROC T&C Program Manager - ROC Commercial Manager - SI Project Director - Customer and Contractor Release Project Managers - Customer and Contractor Lead Architects	- Release Project Managers - Release Team Members if/as required		PHR Report	PHR Report	Weekly
	Project Status Update Pack	Developed and presented during the Management Committee Meeting	Distributed to attendees of the meeting	Distributed to attendees of the meeting	Pack covers the following items: i. Project status and update ii. Schedule Management iii. Commercial Management iv. Relationship Management v. Proposed efficiencies / business improvement vi. Future scope opportunities associated with the ROC Program vii. Escalated risks raised by the Multi-Vendor Management Meeting viii. General business	N/A	PMO Coordinator	Monthly

Appendix K – Initial Requirements

Release 1

Frequentis Initial Requirements.pdf

Release 1-T2

The Initial Requirements for Release 2 – T2 consist of:

1) The Release 1 Detailed Design Documents; and
2) The requirements for REM2017.R2 set out in the table below.

Sydney Trains REM2017.2 Requirements			
Requirement		**Business Requirements 2017.2**	**In scope**
2Way SMS	2 Way SMS	The system shall provide a 2-way SMS capability to allow an incident responder to acknowledge that information has been received and confirm via a predefined numbered response that incident is being actioned accordingly.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they have accepted the task for actioning.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they have arrived at the designated location.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if the incident has been resolved.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they cannot accept the task due to being busy.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise that they have rejected the task.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they cannot accept the task due to being unreachable.	Included
Trip Number	Trip / Run Number format	The system shall adhere to both Sydney Trains Passenger Service and Freight Trains formats for Trip Numbers for all Delay Reports. Examples: • Sydney Trains: 22-A; 2—A; 22--; 2--- • Freight Trains: 4BM4 The required format is provided in the requirements below.	Included

	Trip / Run Number format	The system shall adhere to both Sydney Trains Passenger Service and Freight Trains formats for Trip Numbers for all Notifications. Examples: • Sydney Trains: 22-A; 2—A; 22--; 2--- • Freight Trains: 4BM4 The required format is provided in the requirements below.	Included
	Trip / Run Number format	The system shall adhere to both Sydney Trains Passenger Service and Freight Trains formats for Trip Numbers for all Incidents. Examples: • Sydney Trains: 22-A; 2—A; 22--; 2--- • Freight Trains: 4BM4 The required format is provided in the requirements below.	Included
	Trip / Run Number format	The system shall provide the ability to enter alphanumeric characters (A-Z, 0-9) in the Trip/Run Number field.	Included
	Trip / Run Number format	The system shall provide the ability to enter multiple dash characters (-) into the Trip/Run Number field in any sequence.	Included
	Trip / Run Number format	The system shall ensure entry of alphabetical characters in the Trip/Run Number field is in uppercase.	Included
	Trip / Run Number format	The system shall ensure that other special characters (e.g. %, @,J, etc.) cannot be entered in the Trip/Run Number field, with the exception of dash character (-).	Included
Pop-ups Alerts	Duplicate Alert	The system shall alert the user if he/she is creating a new incident from a notification for which an incident already exists.	Included
UI	Incident update indication	The system shall visually indicate on the Incident Overview screen when an incident has been updated.	Included
Incident Ownership	Incident Ownership assignment	The ability to assign and change ownership of an incident throughout incident lifecycle. Rationale: Escalation is presented in REM COTS product via the "incident type". The system currently does not support a handover between incident managers. The system supports a single incident creator/ coordinator. Potential impacts to clear understanding of current incident managers and previous incident managers who may need to be contacted for further details on the incident (e.g. historical information recorded). May result in increased phone calls to determine who is to be contacted.	Included

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
Detect				
IMS-CAP-001	The ability to integrate with various alarm sources, systems and technology to receive automated alerts. The type of automated alerts is to include but not be confined to: • Service delays received from DTTS, • Signal passed at danger, • Condition Monitoring, • Signal failure, • Points failure, • Overhead wiring failure, • Social media feeds, • Dwell time, • Section running time Lost, • Control system failure, • Technology failure, • Electrical failures / SCADA Network, • CCTV, • Alerts received from other incident management systems. Note: Please refer to NER for details on interfacing standards and technologies	**E**	Configuration	The product has a generic interface for creating incidents based on alerts raised from various upstream systems (e.g. asset monitoring, camera feed, incoming emergency calls, other incident management or condition monitoring systems). Incoming alerts are aggregated in a separate alert monitor view which allows users to create incidents or dismiss alerts.
IMS-CAP-002	The ability to create a network incident notice. Details to be captured for example are: • Issuers name, • Designation, • Contact details, • Relevant factual information, • Asset Information, • Weather (Forecast, actual, variance , actions).	**E**	Out of The Box	The product allows the generation of predefined reports and can export defined incident information to downstream systems as specified in IMS-CAP-044, IMS-CAP-045, IMS-CAP-046, IMS-CAP-047.
IMS-CAP-003	The ability to receive and input manual alerts. For example: • Phone call, • Text, • Email, • Web, • Mobile application. Phone calls are to be: • Recorded and entered into IMS, • Directed to the appropriate staff member. Note: All manually captured information is to be captured as structured data, this may involve prompts and human interaction.	**E**	Configuration	Users can create new incident records based on manual alerts received. Manually captured information can be filled out in the corresponding data fields, while unstructured data can be correlated to incidents as file attachments. REM supports integration with voice recording systems.
Record and Assess				
IMS-CAP-004	The ability to receive Network Incident Notices. For example: A network Incident Notice must be issued as soon as possible when an incident occurs on the rail network, and involves: • Actual or potential loss of life or injury, • Actual or potential damage to or defect in network infrastructure, • Damage to or defect in rail traffic, • Breach of Network Rules or Network Procedures.	**E**	Configuration	Network Incident Notices are treated and processed similarly to incoming alerts in the alert monitor view as specified in IMS-CAP-001, allowing the user to create an incident record based on the Network Incident Notice.
IMS-CAP-005	The ability for users to search and filter alarms. For example filter by: • Type of alarm, • Location of alarm, • Time and date of alarm.	**E**	Configuration	The alert monitor view allows users to filter alerts by type/source, location, time/date.
IMS-CAP-006	The ability to supress automatically created alarms. For example suppress automatically generated alarms, including but not limited to: • all persons/departments (e.g. false alarms), • by individual alarm instance, alarm type and/or department, • during shunting operations, • during manual proceed authorities (non-signalled movements).	**E**	Customisation	The suppression of alarms from alarm source types, e.g. CCTV, or specific sources e.g. a concrete CCTV camera can be configured. The suppression can be configured for a limited time interval. The display of alarms coming from certain alarm source types can be suppressed by the administrator for all users / roles.
IMS-CAP-007	The ability to manually create and update incident records. For example incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	The creation and management of incident records is one of the product's key capabilities. Incident records can follow a predefined template, or follow a configurable workflow consisting of configurable checklists and functional modules.
IMS-CAP-008	The ability to automatically create and update incident records based on predefined business rules. Incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	A newly raised incident is automatically provided with a unique identifier. A title can be suggested based on the incident category, location, Incident ID or other criteria. See IMS-CAP-007 for predefined and custom incident templates.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-009	The ability to automatically record incident details. The details and business rules required to automate the capture of incident details need to be configurable. For example details captured may include: • Users name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (Location of train, geographic location etc.), • Reporting system, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers), • Reference data, • Weather, • Events near by. Note: The details required will change based on the type of incident being recorded. It is envisaged that automatically created incident records will require some level of manual input to capture data elements which are not provided by other integrated systems.	**E**	Configuration	Incident details can be automatically filled or updated based on business rules, e.g. incident type, location and priority based on the alert source; weather data from an external service, affected services based on the incident location and impact etc.
IMS-CAP-010	The ability to manually record incident details. For example user may be prompted as to details required based on: • Users role (by either selecting from list or manually typing), • Type off Incident. Incident details may include: • Users Name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (can be location of train, geographic location etc.), • Reporter, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers) • Reference data • Weather, • Events near by. Note: The details required will change based on the type of incident.	**E**	Out of The Box	Incident details can be captured manually. The specific details are configurable for different incident templates. The product allows the recording of incident details as combo boxes or dropdown lists, radio buttons or checkboxes and text boxes.
IMS-CAP-011	The ability to correlate multiple incident records into a single incident record. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	Out of the box: The product allows the creation of a master incident record for aggregating separate incidents that are tied to or caused by the same event. Duplicate incident records can be cancelled without loss of lawful recording information. Customising: Rules for merging of incidents have to be elaborated together with the customer.
IMS-CAP-012	The ability to prompt users in the correlation incident records based on predefined business rules. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	It is possible to identify incidents that are potentially tied to or caused by the same event based on predefined business rules, such as correlating incident location and category for incidents within a certain configurable time frame.
IMS-CAP-013	The ability to receive a list of affected train services in real time from an external system and associate these with an incident. For example: • Receive a list of affected services associated with a single incident, • Impact the incident had on each service, • The number of passengers travelling on each service, • The time in which the service returned to planned stopping times.	**E**	Configuration	The affected train services can be acquired from the DTTS in real time and can be referenced to the IMS incident. REM out of the box contains an interface to Thales Aramis-D.
IMS-CAP-014	The ability to easily indicate the impact an incident is having on services either manually and / or automatically. For example users may be prompted / supported by the system to capture impact details. Impacts could be to: • Specific runs, • Runs on a line, • Runs passing through a stations, • Cross modal transport, • Stations. Types of impact will include: • Delays, • Cancellations, • Altered stopping patterns, • Change route, • Alternative transport.	**E**	Configuration	The impact of an incident on services can be determined in conjunction with interface data from the DTTS. Out of the box, REM contains an interface to Thales Aramis-D.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-015	The ability to retrieve asset information from an external system in real time. For example: • Sets, • Stations, • Lines, • Overhead wiring, • Signals, • Points, • Assets maintenance schedules (Over due, next planned etc.).	**E**	Customisation	Asset information can be retrieved from an external ERP solution (Ellipse, SAP).
IMS-CAP-016	The ability to view the availability of incident response personnel. For example: • View availability of staff already in operation, • View the availability of standby crew or response personnel, • View the capabilities of crew (i.e. trained to operate which set types), • View contact details, • View current location of staff in operation. Note: Requirement linked to IMS-CAP-026	**E**	Customisation	The product provides a checklist view which allows the assignment of action items to selected personnel. The user is prompted with a selection of incident response personnel, along with contact details, each flagged as available or unavailable. The crew capabilities can be stored as (an) additional attribute(-s) or linked documents. The response team has to acknowledge or deny the task assignment and report the completion of the task. The current location of response teams can be determined by devices allowing GPS tracking. Those devices are not part of the product. Using GPS tracking devices to localize personnel may lead to legal issues.
IMS-CAP-028	The ability to assign / action response team / personnel. For example: Provide assignee with visibility of: • Competence, • Availability of response teams, Provide response teams with: • Notification of action including all details required (fault type, location etc.), • Ability to accept / reject action, • Provide checklist of actions to address.	**E**	Customisation	The assignment of action items to response teams is described in the requirement IMS-CAP-016. Response teams can be provided with incident information and checklists containing action items using the product's Mobile Client. The Mobile Client allows the user to accept or reject actions. Furthermore, incident information can be distributed using the product's outbound communication channels as specified in IMS-CAP-025
IMS-CAP-017	The ability to identify the location of an incident on a geospatial view. For example: • Incidents location in relation to rail network assets, • Location based on the geospatial coordinates of the incident, • Street view, • Aerial view, • Terrains view, • Mark up map with location / notes, • Ability to geo reference, • Identify site / incident access points etc.	**E**	Out of The Box	The location of an incident can be identified and displayed in the integrated GIS View. Additional layers containing rail specific information (e.g. assets, access points, railway tracks and stations,..) or general information (street and terrain view) can be displayed in the GIS View. The integrated GIS view allows the user to automatically focus on the entered incident location.
IMS-CAP-018	The ability to manually add an estimated recovery time to an incident record. For example: • Estimated recovery times, • Estimated response times. Note: This estimate may be based on historic data or user knowledge.	**E**	Out of The Box	It is possible to set estimated response and recovery times for incident records.
IMS-CAP-019	The ability to automatically add an estimated recovery time to an incident based on configurable business rules. For example: • Estimated recovery times, • Estimated response times. Note: It is envisaged these automated estimations will be applied based on historic data.	**E**	Customisation	The product allows a basic configuration of business rules based on a defined number of incident details (e.g. type, weather condition) that automatically add an estimated response and recovery time for incident records.
Select / Define and Activate Response Plan				
IMS-CAP-021	The ability to initiate a workflow in response to creating an incident record. For example: • Initiate relevant workflow / response plans.	**E**	Out of The Box	The product allows the initiation of workflows based on defined business rules. For example, alerting of internal and external response teams, assigning tasks to response teams or an automated information of affected Rail Undertakings.
IMS-CAP-022	The ability to initiate manual predefined response plans. For example: • Provide plans to support Train Controllers or incident personnel in decision making. • Initiate alternate transport plans.	**E**	Out of The Box	Predefined response plans can be initiated as workflow-based checklists that allow the distribution of information to the involved parties.
IMS-CAP-023	The ability to create and initiate ad-hoc response plans. For example: • Create plans to respond effectively to rare / unusual incidents.	**E**	Out of The Box	Custom action items can be added to the checklist during the resolution of the incident. Each action item has a fixed set of attributes (Title, Description, Assignee, Timestamp/Range, Priority). Additionally, REM supports merging response plans for different types of incidents to cover rare and unusual incidents.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-025	The ability to provide notification services to selected personnel For example: • Push based notifications, • Pull based notifications, • Subscription based notifications, • Push media update. Manage notification distribution lists and groups and business rules: • Create, • Read, • Update, • Delete, • Notifications to be distributes in near real time. Note: Notification may include notifying crew / operational staff of CAN warnings (Condition Affecting Network (i.e. Temporary Speed Restrictions) Notifications will also be distributed to management/ executives and other 3rd parties.	**E**	Out of The Box	Outgoing notifications can be manually or automatically sent to various channels, i.e. Short Message Service, email, Voicemail or as push/pull based notification. REM includes a configurable rule engine that determines who has to be informed about which incidents, and using which communication channel. Notification distribution lists can be configured.
IMS-CAP-026	The ability to track and display the location of all response teams / personnel: For example: • Location indicated on a map / geospatial display, • Roster information, i.e. the availability of team / personnel, • Current list of assigned actions assigned. Note: Requirement linked to IMS-CAP-016	**E**	Out of The Box	The integrated GIS View, automatically focusses on the incident location and displays the location of response teams associated data (assigned actions, roster information) in a dedicated layer.
IMS-CAP-027	The ability to view a current list of consumables that a teams / personnel are in possession of. For example: • Consumables required to fix / address a fault, • Tools required to fix / address a fault, • Vehicle type (specific vehicle type may be required to access a fault), • Historical analysis.	**E**	Customisation	The product is capable of displaying specific information (e.g. consumables, tools,…) about incident teams, retrieved from an external source system.
IMS-CAP-029	The ability for mobile personnel capture incident details when responding to a incident. For example: • Response teams capture and provide more details (via forms and checklists), • Reponses teams are able to view the latest details / information captured by other staff members.	**E**	Out of The Box	Response teams can be provided with a mobile client of the product that allows the capturing of incident details.
IMS-CAP-030	The ability to create predefined workflow / check lists for different types of incidents. For example different types of incident groupings will include: • Equipment, • Miscellaneous, • People, • Trains, • Weather Conditions. Note: Different types of incident will require involvement from different personnel and 3rd parties. Ability to: • Create, • Read, • Update, • Delete.	**E**	Out of The Box	Incident categories, workflows and checklists are configurable. Access rights for checklist items can be configured.
IMS-CAP-031	The ability to assign an incident actions manually and / or automatically. For example: Assign incident actions to a: • Business group / division, • Individual staff member. Assigning Incident records / actions to be: • Manual and / or, • Automated based on predefined criteria / metadata. Note: It is envisaged that workflow will have predefined actions and potential business groups / divisions responsible for them however this requirements allows for additional actions to be assigned.	**E**	Customisation	The product allows a rule based or manual assignment of incident actions to selected personnel. Incidents can be assigned to users or roles (corresponding to divisions). A filter functionality allows users to see incidents assigned to them.
IMS-CAP-032	The ability to manually override / skip workflows and checklists. For example authorised user able to depart: • Predefined Workflow, • Predefined Activity, • Predefine Checklist.	**E**	Out of The Box	The product allows workflows, activities and checklists to be skipped or processed in an arbitrary order unless mandatory for the completion of the workflow.
IMS-CAP-033	The ability to manually re-assign a workflow activity to a different individual or role. For example: • Initial assigned user unable to action task.	**E**	Out of The Box	The responsibility for the workflow activity can be changed to a different individual or role.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-034	The ability to distribute response plans to selected personnel electronically. For example via: • Web based application • Mobile application. **Note:** It is envisaged that distribution business rules would be managed as part of workflow.	**E**	Out of The Box	Response plans can be distributed to selected personnel by various communication channels or a web/mobile client.
IMS-CAP-035	The ability to provide a collaborative working environment in which multiple user will have the ability to simultaneously access and update incident details in real-time. For Example internal and external users provided with: • Visibility of incidents via multiple mechanisms: • Video, • Conferencing (calling and video), • Web, • Application based, • Notification, • Phone, • Mobile App, • Ability to provide input / suggestions. These would be managed through role based permissions. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan • Red indicates that required actions for the incident are not tracking to the response plan.	**E**	Out of The Box	The product allows multiple users to simultaneously access and update incident details. Incident information can be made available in the web and mobile client or distributed as outlined in IMS-CAP-025 (Short Message Service, email, Voicemail or as push/pull based notification). An incident overview allows users to track the progress of multiple incidents, allowing a graphical representation as traffic lights.
Track and Escalate				
IMS-CAP-038	The ability to record action(s) within an incident record. For example record action information such as: • Calling emergency services, • Calling operational staff, • Timestamps. The status of an action is monitored on its own and as part of the overall workflow, including but not limited to: • Overall status, • Time-forecast to complete, • Action completed, • Action authorisation (whom, when etc. where applicable), • Incidents and actions are tracked until completion, • Critical issues, • Constraints & Dependencies.	**E**	Out of The Box	Every single action for incident handling is logged and flagged with an automatic system timestamp, which cannot be overwritten. Additionally, the user can manually set a timestamp for specific events during incident handling (which is tracked separately). Otherwise, the timestamp is automatically filled with the current time. The tracked information allows the monitoring of the incident's status, action authorisation and completion as well as derived issues, constraints and dependencies.
IMS-CAP-039	The ability to provide visualisation capabilities to easily assess an incident and the status of its progress. For example: • On a rail schematic map, • On a geospatial map, • Affected service(s), • Related assets/equipment e.g. gates and assets, • Likely impact. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan, • Red indicates that required actions for the incident are not tracking to the response plan, • The ability to display a heat map to visualize or alert over crowding on platforms.	**E**	Customisation	The product allows for the integration of an existing GIS view. A web based GIS view can be integrated in a widget within the incident record detail view or in a separated application window. Given an interface that allows for raising a zoom to location action, the GIS view can automatically focus on the incident location provided by the user. There are various alternatives for integration, that need to be specified in detail in the ECI phase. The GIS View allows for the localisation of an incident, as well as related asset information (if provided by an ERP system as outlined in IMS-CAP-015). The impact on affected services can be determined in conjunction with the DTTS solution and visualised within the GIS view. The incident progress can be tracked as specified for requirement IMS-CAP-038. Overcrowding of a platform in form of heat maps can be visualized in the GIS view, requiring external data. Additionally, the product allows network drive integration to provide specific information (in the form of documents, spreadsheets or checklists) for the relevant railway installations.
IMS-CAP-040	The ability to track the progress / monitor incidents from creation until completion. For example: • Overall status, • Time-forecast to completion, • Action completed, • Action authorisation (who, when etc.), • Assignment information (assigner, assignee, time/date of assignment), • Updates made to the record (new comments, change to 'fields' such as the incident's category, priority etc.), • Internal communications distributed, • Customer Information distributed.	**E**	Out of The Box	All of the exemplary data (i.e. every single action taken within the incident record and interface communication) is fully logged and flagged with an automatic system timestamp.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-041	The ability to manually and / or automatically escalate a activity or task based on a pre-defined business rules. For example: Business rules are to be configurable. Automated escalation based on: • Time boxed activities, (an incident has not 'progressed' (no record update) for a specified timeframe) • Assignee not available. Manual escalation required where: • The incident itself has risen to the next severity level. • An incident has no response plan after a specified timeframe • Category, severity, priority.	**E**	Customisation	The product allows an automatic (rule-based) or manual escalation of incident action items to defined roles or personnel.
IMS-CAP-042	The ability to manually prioritise incident, actions and activities. For example: • Change priority due to severity.	**E**	Out of The Box	The incident's priority can be set in the corresponding data field.
IMS-CAP-043	The ability to filter views and create real-time and post event incident reports. For example: • All current ('open') Incidents, • All Incidents of a given status. Views of an incident can be customised as different staff (e.g. different profile, location, team etc.) will require different information. Ability to export report based data through a standard based interface.	**E**	Out of The Box	The incident list allows custom filters and sorting and can be exported as .csv/.xls.
IMS-CAP-067	The ability to adjust the boundaries which define the areas of responsibility for users. For example: • Train controller boundaries / sectors (Boards), • Response teams areas of responsibility.	**E**	Out of The Box	The product allows the definition of boundaries/areas of responsibility for different roles, based on time and incident location.
IMS-CAP-068	The ability for users to reserve a incident number in the system without having to provide incident details.	**E**	Out of The Box	An incident number can be reserved providing a minimum of mandatory fields specified by the customer.
Close and Report				
IMS-CAP-044	The ability to create electronic record (package) containing all incident record details and its associated / linked data files. For example: Details may include: • Origin of the Alarm / Incident (e.g. source system, user name), • Priority, • Time of alarm, • Incident ID, • Incident Level, • Cause, • Creator, • Impact on customers. • Time and Date. Other linked data may include: • CCTV, • Phone calls recorded, • Emails, • Text message, • PDF, • Photographs.	**E**	Configuration	The product allows the generation of predefined electronic records.
IMS-CAP-045	The ability to provide incident information to other downstream systems in real-time. For example: • Basic incident information, • Impact on services, • Expected restoration times. Note: Impact to trips, line and station would need to be received from DTTS.	**E**	Out of The Box	The product provides a default XML export functionality of incident details.
IMS-CAP-046	The ability to generate defined and ad hoc reports on incident status.	**E**	Out of The Box	The product can generate defined and ad hoc reports.
IMS-CAP-047	The ability to export safety related incident information in real time to an external system. Note: Refer to IMS architecture for interfacing systems.	**E**	Out of The Box	Incident data can be exported to external systems.
IMS-CAP-048	The ability to export incident details to a data warehouse.	**E**	Out of The Box	Incident data can be exported to a data warehouse solution.
IMS-CAP-050	The ability to manage business rules for closing incident records.	**E**	Out of The Box	Business rules for closing an incident can be defined (i.e.status-depenant mandatory fields or action items).
Other Capabilities				

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-051	The ability to create scheduled reports based on predefined criteria. For example: •Annually, Monthly, Weekly, Daily, Adhoc, • Date / Time, • Incident Reports, • OCR Reports, • NIN Reports, • CAN Reports, • AM Peak Composition Reports, • PM Peak Composition Reports, • AM Peak Summary Reports, • PM Peak Summary Reports, • Delayed Crew Reports, • NIN Report - Outstanding, • NIN Report - Date Raised, • Inactive User Reports, • Other reports such as: Ministerial reports, punctuality reports, sick passengers reports, airport line performance reports, maintenance incident reports etc.	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom reports. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required reports. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-052	The ability to manage (C,R,U,D) predefined reporting templates. Note: Business needs are constantly evolving therefore it is envisaged that report templates will need to be updated and new report types will need to be created.	**E**	3rd Party	JasperReports includes a report designer that allows the creation of custom reports.
IMS-CAP-053	The ability to manage (C,R,U,D) reference data. For example: • Import reference date, • Manage the different categories of incidents, • Manage Incident coding (used for attribution), • Asset information, • Stations, • Line, • Sectors, • Fleet types. Ability to: • Create (access / import) • Read, • Update, • Delete, • Export.	**E**	Out of The Box	The product is supplied with a separate Data Management Client which allows the management of reference data.
IMS-CAP-055	The ability to provide access to incident information to mobile / operational staff and 3rd parties external to the ROC. For example the ability to: • Provide real-time access to users and 3rd parties, • Received incident updates from a mobile device, • Ability to create incident notifications, • Provide a mobile collaborative work place, • Optimise data for mobile devices.	**E**	Out of The Box	The product is supplied with a mobile client which provides users with real-time incident information. The mobile client allows response teams to capture incident information or manage action items. The product allows the distribution of incident information via SMS, email and Voicemail.
IMS-CAP-056	The ability to manually and automatically link / attach relevant information to an incident record. For example the ability to link the following types of data to incident records: • CCTV & video footage, • Photographs, • Diagrams, • Pictures, • Phone call recordings, • Documents.	**E**	Out of The Box	Arbitrary attachments can be uploaded in a network drive and linked to the incident record. Links to relevant incident information can be captured in the incident details.
IMS-CAP-057	The ability to create, manage and maintain workflows, templates and checklists. For example: Workflows, Checklist, Templates we require the ability to: • Create, • Read, • Update, • Delete. Workflow capabilities to manage: • Business processes, • Activities (manual and automated), • Deadlines, • Check lists, • Business rules, • Notifications, • Escalations, • User roles, • User permissions, • Process monitoring, • Administration, • Auditing. Note: It's envisaged that some safety / network rules could be incorporated into the workflows either as pointer or guidance or actions.	**E**	Customisation	The product's design philosophy focusses on a time critical response and resolution of incidents. Workflows are represented by configurable checklists and functional modules which control manual and automated activities, notifications and escalations and allow the capturing of incident details. Checklists and functional modules are configurable components that allow the modelling of workflows. Checklists are ordered and displayed depending on incident categories, incident location and time. Business rules can be set for action items in the checklist, for example, to automatically notify users. The product allows an in-depth administration of user roles and permissions. It is possible to monitor the overall progress of multiple incidents in the list view, while details for single incidents can be accessed through the incident view. The product integrates an audit log, which fully traces all activities that have affected at any time a specific operation, procedure, or event (see IMS-CAP-038).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-058	The ability to manage alarm business rules: For example: • Manage Hierarchy of alarms, • Automated suppression rules, • Associated workflows rules, • Notification rules (Colour, frequency, visual, brightness, audio, volume), • Trigger CCTV views. Note: Requirement related to human factors.	**E**	Configuration	Alarm business rules can be managed in the Administration Client.
IMS-CAP-059	The ability to manage the roles and their associated permissions. For example: • Create, • Read, • Update, • Delete. • Roles (for example: Train Controller, Shift Manager), • Groups, (Train Control, Customer Information, Signalling etc.), • Permissions (ability to supress alarm, depart workflow, assign workflow). **Note**: The roles need to be in alignment with and in consideration of roles defined in other systems.	**E**	Out of The Box	Roles, Groups and Permissions can be managed in the Administration Client.
IMS-CAP-060	The ability to filter /search and select incident records for viewing. For example: • Origin (e.g. source system), • Priority, • Time of alarm, • Most recently acknowledged, • Incident ID, • Incident Level, • Cause, • Creator, • Time and Date.	**E**	Out of The Box	The incident list represents a view of all incidents. Those can be can be filtered, searched and sorted by different incident attributes, e.g. incident location, category, time/date, origin,…
IMS-CAP-061	The ability to view or instigate raising or closing of defect records for assets whose defect has caused a delay to services. For example: • View defect records for assets, • Instigate opening defect record for a specific asset / incident, • Instigate closing a defect record for a specific asset / incident. **Note:** Defects are managed in Fault Management Systems.	**E**	Customisation	The IFMS interface allows the viewing, raising or closing of defect records.
IMS-CAP-062	The ability to integrate and share real-time and post event incident information with other systems. For example systems such as: • Customer Information Management System, • Dynamic Timetabling System, • Operational Video Display System (OVDS), • Business Intelligence Systems, • Calculation Engine, • Fault Management Systems, • Safety Management Systems, • External 3rd Party Systems, • Other Incident Management Systems, • Other Computer Aided Dispatch Systems (i.e. ICEMS), • ERP systems, • Geospatial Information Systems (such as Small World), • State emergency services, • Wayside Information Management System (for alarms), • TMC Incident Management Systems, • Train Location Systems / On Time Running (TLS-OTR), • Billing systems . For example information exchange patterns such as: • Bi-directional request & respond, • Pull, • Push. • Receiving incident records from 3rd part incident management systems. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	Incident information can be sent in real-time or based on defined events (e.g. closing/completing an incident), over a variety of channels or services, as specified in IMS-CAP-025. Specific interfaces allow a deeper integration into up- and downstream systems, i.e. CIMS, DTTS, TLS-OTR, FPe, FMBS, CE, Reliance Rail, IFMS, SRS, ERP, GIS, a business intelligence solution, WIMS and 3rd party solutions. See Chapter 8 - "Interfaces" of the document "Understand Requirements_FRQ.pdf" for a detailled interface description.
IMS-CAP-063	The ability to integrate with a day of operation timetabling system. For example: • Receive alerts when services are experiencing delays, • Receive transposition details (i.e. add stop, skipped stop, terminate, cancel run etc.) • Receive lists of services affected, • Provide estimated restoration / recovery times • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the DTTS allows the interchange of incident and alert information (including affected services and estimated restoration and recovery times) and transportation details (SIRI SX, PT and ET).
IMS-CAP-064	The ability to integrate with a Customer Information Management System. For example: • Provide cause impact and advice details, • Provide estimate recovery times. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the CIMS allows the interchange of incident information and recovery times (SIRI SX).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-065	The ability to integrate / display views on a large video display. For example: • Display dashboard type views, • Display GIS views, • Display location of response teams, • Display the location of a incident.	**E**	Out of The Box	It is possible to display the required information on a large video display. The product provides data for dashboard and GIS displays in real time and allows visualisation in a standard browser.
IMS-CAP-066	The ability to support the management of multiple incidents simultaneously. For example: • Different users working on different incidents, • Same users supporting different incidents.	**E**	Out of The Box	It is possible for different users to process different incidents. One user can open multiple incidents for processing at the same time. Multiple users can process a single incident at the same time. The product detects data conflicts and provides different mechanism for their resolution.
IMS-CAP-069	The ability for users to configure their own user preferences. For example: • Set up notifications of interest based on incident type, area of responsibility, • Set up method of notification, text, email etc., • Set up dashboard views. Note: Authorisation and Authentication is covered in the NFR's.	**E**	Out of The Box	Users can configure their personal notification rules and outbound channel in the client application. Personal dashboard views can be configured in the integrated 3rd party component as specified in IMS-CAP-079.
IMS-CAP-070	The ability to manually and automatically attribute further details to incident records. For example: • Who is responsible for root cause analysis, • Who the incident belongs to (Business unit, contract etc.), • Incident Delay Attribution (Late, very late, cancelled etc.), • Incident status (Open, Closed etc.), • Location of a incident, • Force majeure, • Attribution reporting, • Ability for attribution through mobile devices. Note: There are business rules (contractual timeframes) in which externals need to be informed of incident details.	**E**	Out of The Box	Further incident details can be manually or automatically (based on business rules) added to the incident description.
IMS-CAP-071	The ability to trigger viewing of specific CCTV cameras based on predefine alarms and business rules. For example: • Trigger CCTV cameras once a emergency help point has been activated (i.e. on set, on station, in lift etc.), • Trigger CCTV cameras on plats forms that are over crowded.	**E**	Out of The Box	The product is capable of catching alerts from CCTV cameras on predefined events and can display live and recorded video feeds.
IMS-CAP-072	The ability to assist users in managing / arranging alternative transport with 3rd party providers. For example: • Notification, • Booking, • Tracking progress (i.e. ETA), • Communicating with station staff. Note: This requirement is also covered under workflow requirements.	**D**	Out of The Box	3rd party providers for alternative transports can be tied to the product's responsibility model, allowing the user to access booking information or communication with station staff over various outbound channels, based on the incident location. Progress tracking can be assisted with a specific checklist.
IMS-CAP-073	The ability to provide users with visibility of pre-planned special events / track work. For example: • Easter show, • Carols in the domain, • Track work - daily summary reports, • Road, bus, ferry and light rail.	**E**	Configuration	The Administration Client allows the configuration of special events in advance. The User Client can display a list of upcoming events.
IMS-CAP-074	The ability to provide users with access to images, photos and documents to aid in the communication of incident details. For example: • GIS imagery, • Access to reference data, • Ability to edit imagery and distribute updates.	**E**	Configuration	The User Client allows the upload of unstructured data to a network drive folder for the specific incident (see IMS-CAP-056). It is possible to send incident details and file attachments to designated users or user groups. The GIS View provides the user with a toolset for drawing objects into the GIS view and publishing updates to other users.
IMS-CAP-076	The ability to manage (C,R,U,D) meta data for records within the system. For example: • Create, • Read, • Update, • Delete. Meta data examples: Location, Creator, Alarm Type etc.	**E**	Customisation	It is possible to manage meta data for incident records.
IMS-CAP-078	The ability to assist / prompt users to help in the diagnosis of the root cause of a incident / defect.	**E**	Out of The Box	The product aids the user in diagnosing the root cause of the incident. For example by: - checklist-based gathering and display of incident information - detailed information from interfaces to other incident management systems - correlating data from upstream or integrated systems (e.g. relevant assets, incident location details, weather information..) - display of alarm sources

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-079	The ability to manage (C,R,U,D) dashboard views that will be available to users. For example: • Create, • Read, • Update, • Delete. • Flexible filtering and data visualisation, • Shared views, • Views including GIS, • Views including internal and external incident information	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom dashboard views. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required dashboard views. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-080	The ability to provide users with the ability to access and view dashboards For example: • Access given to those who are within ROC, • Access provided via mobile device. • Information on a dashboard is real-time, • Tables, graphs, hot spots, GIS views etc.	**E**	3rd Party	The recommended 3rd party tool (see IMS-CAP-079) provides a browser based dashboard view which allows users to access and view dashboards on a broad range of devices, e.g. large video displays or mobile devices. The product provides those dashboards with real-time data.
IMS-CAP-081	The ability to view a incidents sequence of events in time order in either real-time or post incident. For example: • Real-time replay to help identify what actions have been activated, • Post event replay to learn and improve process and procedure	**E**	Customisation	The product's audit log enables a full reconstruction of the incident sequence. It is possible to provide a replay functionality for displaying the actions taken in the incident resolution.
IMS-CAP-082	The ability to manage (C,R,U,D) a contact management details. For example: • Telephone, email, mobile, address, • Provide access contact details for internal and external 3rd parties, • List of on call response staff. **Note:** This may require integration with existing legacy systems.	**E**	Out of The Box	The product's Administration Client allows management of contact details. The User Client can display corresponding response staff and allows the distribution of contact details.
IMS-CAP-083	The ability to simulate how a incident recovery may unfold. For example: • Based on actions assigned, • Based on historical information (provide improved estimated response / recovery times), • Based on feedback received from end users.	**I**	Customisation	It is possible to implement a rule set that allows a simulation of the actual incident resolution based on incident details (estimated response and recovery times and assigned actions).
IMS-CAP-084	The ability to view and monitor resource constraints. For example: • Monitor availability of resources, • Monitor shift start and end times, • Access competence levels. Note: This will be useful information prior to dispatching the relevant resources to assist in the recovery of a incident.	**E**	Out of The Box	The product is capable of displaying available response teams as outlined in IMS-CAP-028. Shift start and end times as well as competency levels of resources can be managed in the Administration Client
IMS-CAP-085	The ability for the system to dynamically learn and improve processes based on historic data. For example: • Ability to change activities based on timeframes, • Ability to suggest alterations to predefined support plans due to identified bottle necks.	**I**	Future	
IMS-CAP-086	The ability to capture incidents for existing incident management systems. i.e. Act as the single point in which all incident records are created. Note: It is envisaged that IMS will become the single point in which incident records are created. After which IMS will pass the incident records down to the existing incident management systems. For example: • IFMS, • SRS, • FMS.	**E**	Customisation	The product will integrate with the existing incident management systems for cross referencing incidents, sharing incident information or raising and closing incidents.

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
Accessibility			
NFR-ACC-001	The component/(s) shall be accessible via standards based browser environment or thin client, for example: • Remote Desktop Protocol (RDP) • Citrix	**E**	Out of the Box
NFR-ACC-002	The component/(s) shall be accessible remotely to 3rd parties, based on business rules and appropriate permission, for example: • Transport Management Centre • New South Wales Police Force	**I**	Out of the Box
NFR-ACC-003	The solution shall enable the dynamic reconfiguration of workstations to meet operational demand, interacting with the necessary infrastructure and telecoms systems to enable communications and control authorisation to move with a workstation.	**E**	Out of the Box
Auditability			
NFR-AUD-001	The solution shall provide the ability to tailor audit requirements by component. The audit logs shall contain at least the following security relevant information: • identification and authentication of users • date and time that the event occurred and was recorded • source system, device or application, e.g. IP address, application, or assigned name • type of action, for example include authorise, create, read, update, delete and accept network connection • before and after values when action involves updating a data element • any status, response or errors values generated as a result of the event or activity.	**E**	Out of the Box
NFR-AUD-002	The solution shall provide the ability to tailor audit requirements by component. The events to be recorded in activity and/or audit logs need to include but not necessarily be limited to: • start up and the stopping or shutdown of: o applications and databases o operating systems, including servers o infrastructure components such as firewalls, routers and switches • connection initiation, establishment and termination, including: o source and destination address o desired or requested service • information received from external interfaces as well as information dispatched to other systems • errors that occur in any infrastructure, operating system or application component • successful activities initiated by all individuals, whether authorised or not • changes to production systems and applications • relevant application and/or process/thread activity • creation, modifying, deleting and disabling or revoking of user permissions and access • records created by security systems such as anti-virus/malware tools, IDS/IPS (Intrusion Detection Systems / Intrusion Prevent Systems), firewalls and access/identity management tools	**E**	3rd Party
NFR-AUD-003	The solution shall ensure audit logs are stored and maintained in accordance with the relevant security classification level assigned to the log information, in an un-editable format based on date and/or other recorded audit details to be specified.	**E**	Out of the Box
NFR-AUD-004	The solution shall ensure the audit logs shall be stored in a device separate to the device or application that created the logs. This is to: • minimise the potential for deliberate corruption or unauthorised deletion of logs • permit the use of shared logging infrastructure, including integrity mechanisms, minimising cost overheads and chronologically synchronising logs • improve the ease of correlating events across applications, systems and infrastructure.	**E**	Out of the Box
NFR-AUD-005	The solution shall be designed and implemented to minimise the recording of sensitive or personal identifying information in logs and audit trails unless such detail is necessary for specific business or operational reasons.	**E**	Out of the Box
NFR-AUD-006	The solution shall provide functionality to interrogate audit logs and raise alerts on critical and suspicious activity.	**E**	Out of the Box
NFR-AUD-007	The solution shall provide the ability to restrict access to audit logs, to system and appropriately trusted application administration and support staff.	**E**	Out of the Box
NFR-AUD-008	The solution shall provide Auditors direct access to the audit system to view audit logs and/or the ability to export to a reporting engine.	**E**	Out of the Box
NFR-AUD-009	The solution shall record all access of audit logs. These log records in turn require protection as per NFR-AUD-003 to NFR-AUD-008	**E**	Out of the Box
NFR-AUD-010	The solution shall ensure logging facilities and log information are protected against tampering.	**E**	Out of the Box
NFR-AUD-011	The solution shall support variable retention policies for audit logs, dependent upon Sydney Trains Log Retention Policy "ICT-SGD-70107 Logging".	**E**	Out of the Box
Availability			
NFR-AV-003	The component/(s) shall ensure that the installation of patches / hot fixes etc do not require the system to be taken down or reboot.	**E**	Configuration
NFR-AV-004	The component/(s) shall seamlessly operate across multiple physical data centres.	**E**	Out of the Box
Interoperability			
NFR-IO-001	The component/(s) shall support the following transport data interchange standards: - GTF/GTFS-R - SIRI (v1.3 +)	**E**	Customisation
NFR-IO-002	The component/(s) shall support the extraction of data based on ETL standards.	**E**	Out of the Box
NFR-IO-003	The component/(s) shall support interfacing with email systems supporting SMTP.	**E**	Out of the Box
NFR-IO-004	The component/(s) shall be compatible with common desktop browsers, for example: • Internet Explorer (*note: v8.0 is currently deployed within Sydney Trains*) • Safari • Chrome • Firefox	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-IO-005	The component/(s) shall be compatible with common mobile browsers, for example: • iPhone/iPad • Android • Blackberry	**E**	Out of the Box
NFR-IO-006	The component/(s) clock shall be synchronised with the definitive master clock.	**E**	Out of the Box
Maintainability			
NFR-MNT-001	The component/(s) shall support Sydney Trains backup rotation requirements without the need to restrict end user access.	**E**	Out of the Box
NFR-MNT-004	The Disaster Recovery system shall ensure all audit logs are backed up on a regular basis.	**E**	Out of the Box
NFR-MNT-009	The component/(s) shall provide an automatic way of migrating the data of existing database in case of data structure change during transfer to new versions.	**E**	Out of the Box
NFR-MNT-010	The component/(s) shall provide the ability to revert to a previous release.	**E**	Out of the Box
NFR-MNT-011	The component/(s) shall ensure support activities can be completed remotely to reduce operational interruption.	**E**	Out of the Box
NFR-MNT-012	Maintenance task / service activities must be able to be completed without operational interruption.	**E**	Out of the Box
Manageability			
NFR-MGN-001	The component/(s) shall support systems management standards such as SNMP.	**E**	Out of the Box
NFR-MGN-002	Critical errors (e.g. back up failure) that occur within the component/(s) shall provide warning message to the system administrator (e.g. via SMS, email). These alarms must raise an incident within the Sydney Trains Incident Management System.	**E**	Out of the Box
Performance			
NFR-PER-001	The component/(s) shall provide a response time for all functions (e.g. application loading, screen open and refresh times) below 2 seconds under peak loads. All components should have a fit for purpose response time.	**E**	Out of the Box
NFR-PER-002	The component/(s) shall have the ability to not impact system performance while auditing and monitoring of usage.	**E**	Out of the Box
Portability			
NFR-PO-001	In the event of a requirement to apply a patch/upgrade, the component/(s) shall automatically port any customisation authorised by the application supplier.	**E**	Out of the Box
NFR-PO-002	The component/(s) shall support ease of migration to new technology (hardware or software) as and when it becomes available to the market.	**E**	Out of the Box
Reliability			
NFR-REL-001	The component/(s) shall provide the ability to retain all electronic files, at least until confirmation of a successful exchange / transfer process. This is a procedural safeguard, to ensure that records are not deleted before successful exchange / transfer is reported from the recipient.	**E**	Out of the Box
Reporting			
NFR-RPT-001	The component/(s) shall support standards based printers, formats, page sizes, for example: • A0 for zigzags.	**E**	Out of the Box
Scalability			
NFR-SCA-001	The component/(s) shall support simplicity of scaling options both horizontally and vertically, for example add more users to a node, add more nodes.	**E**	Out of the Box
Security			
NFR-SEC-001	The component/(s) shall support integration with Sydney Trains' Identity and Access Management component/(s) (Oracle) to perform authentication. Sydney Trains authentication process uses Single Sign On / Same Sign On standard (e.g. provide single sign on access to component/(s) once a user is logged on to the Sydney Trains network (via a Sydney Trains computer or a VPN). Content classified as 'Protected' will require the user to provide their user name and password to access it.	**E**	Configuration
NFR-SEC-002	The component/(s) shall support LDAP authentication.	**E**	Out of the Box
NFR-SEC-003	The component/(s) shall support that USER_ID's are only used to identify and reference users and not as proof of identity or authentication mechanism.	**E**	Out of the Box
NFR-SEC-004	The component/(s) shall support access control checks, if a web application, to access protected URL, must not be bypassable by a user that simply skips over the page with the security check.	**E**	Out of the Box
NFR-SEC-005	The component/(s) shall ensure, if a web application, administrator access through the front door of the site is not possible.	**E**	Out of the Box
NFR-SEC-006	The component/(s) shall provide the ability to apply a Segregation of Duties (SoD) matrix for roles and responsibilities, which is easily updated via an administrator user interface. This may include • access levels (role based, field level, category/content) • password requirements - length, special characters, expiry, recycling policies • inactivity timeouts – durations, actions • re-authentication after timeout.	**E**	Out of the Box
NFR-SEC-007	The component/(s) shall provide the ability to provide risk and SoD analysis at user, role, transaction, and authorisation object field value levels.	**I**	Customisation
NFR-SEC-008	The component/(s) shall provide the ability to simulate user role changes, in order to identify hidden risks at the user level, before the introduction of a user change.	**I**	Customisation
NFR-SEC-009	The component/(s) shall provide the ability to enable automation of identification of SoD conflicts at each user level, together with the ability to generate and distribute reports detailing SoD conflicts and mark those that have an approved exception.	**I**	Customisation
NFR-SEC-010	The component/(s) shall support a "change password" function, whereby users are required to provide both their old and new password when changing their password.	**E**	Out of the Box
NFR-SEC-011	The component/(s) shall ensure, if a web application, authentication and session data is not submitted as part of a GET, POST should always be used instead.	**E**	Out of the Box
NFR-SEC-012	The component/(s) shall provide the ability to automatically notify designated security administrators of unauthorized access or attempted access and record in a log with reporting.	**E**	Out of the Box
NFR-SEC-013	The component/(s) shall not indicate whether it was the username or password that was wrong if a login attempt fails.	**E**	Out of the Box
NFR-SEC-014	The component/(s) shall inform users, if a web application, of the date/time of their last successful login and the number of failed access attempts to their account since that time.	**E**	Out of the Box
NFR-SEC-015	The component/(s) shall ensure, if a web application, authentication pages are marked with all varieties of the no cache tag to prevent someone from using the back button in a user's browser to back up to the login page and resubmit the previously typed in credentials. Many browsers now support the "autocomplete=false" flag to prevent storing of credentials in autocomplete caches.	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-SEC-016	Remote access to the ROC components by third party users including Service Providers (e.g. remote system managers, developers. technical support etc.) can only be done by: • Corporate Virtual Private Network (F5-Firepass).	**E**	Out of the Box
NFR-SEC-017	The servers running ROC systems should be isolated on a separate network segments in order to prevent attackers from using them as a platform for mounting attacks on systems in other segments and vice versa.	**E**	Out of the Box
Usability			
NFR-USE-001	The component/(s) shall be designed to minimise cognitive load. Use of configurable audible alarms and visual stimulus must be designed to entice an appropriate response and to differentiate between critical and non-critical events (to be determined by business rules).	**E**	Out of the Box
NFR-USE-002	The component/(s) shall ensure alerts are distinctive, sufficiently loud (at least 5dB(A) above ambient noise level), of an appropriate frequency range (between 500Hz to 3000Hz) and shall not disturb or be confused with other operators alerts.	**E**	Out of the Box
NFR-USE-003	The component/(s) shall provide the ability to change character size, font, contrast and colour of displays to: • allow for the use of more or larger monitors • maximise viewing distance • reduce focal convergence for operators (related to eye strain) • reduce the impact on the operator of heat from monitors.	**E**	Configuration
NFR-USE-004	The component/(s) shall provide the ability for Administrators to perform configuration tasks without customisation and vendor support. These tasks may include: • maintain all value lists • maintain all field labels • maintain data filters • maintain workflows • maintain reports • hide/show and reorder columns • add data filters.	**E**	Configuration
NFR-USE-005	The component/(s) shall provide the ability for Administrations to add more fields to the data input screens for capturing additional business specific information without having to write any code. These fields shall be configured without creating additional tables or without the additional effort of referencing the new fields to the existing fields on the screen. The user shall also be able to define the data type and the data length of the additional fields without having to write any code.	**I**	Configuration
NFR-USE-006	The component/(s) shall have unified, easy, flexible and user friendly interface enabling, for example, the following settings: • personal user menu • personal user settings • field placement on screen • field composition on screen.	**E**	Customisation
NFR-USE-007	The component/(s) shall support multiple screen sizes and resolutions. Minimum display resolution shall be 1280x1024 pixels (design aim of 1600x1200).	**E**	Out of the Box
NFR-USE-008	The component/(s) shall not reduce workspace area if Branding were applied to that component.	**E**	Out of the Box
NFR-USE-009	The component/(s) shall provide online help which is contextual and target the Sydney Trains users.	**I**	Out of the Box
NFR-USE-010	The component/(s) shall ensure all user interfaces have an Australian locale, for example dates displayed in Australian format dd/mm/yyyy, dictionaries Australian, etc.	**E**	Out of the Box
NFR-USE-011	The component/(s) shall be consistent with common interface conventions and best practices, for example: • support minimal keystrokes/typing (e.g. provide reference data via drop down list opposed to free text fields) • quick, simple and user friendly	**E**	Out of the Box
NFR-USE-012	The component/(s) shall perform all functions with keyboard support (mouse is not mandatory).	**D**	Out of the Box
NFR-USE-013	All component/(s) shall be homogenous with respect to keyboard use, screen layout and menu operations with Graphic User Interface (GUI) support.	**D**	Out of the Box
NFR-USE-014	The component/(s) shall have facility to display confirmation / warning windows, for example deletes, changes.	**E**	Out of the Box
NFR-USE-015	The component/(s) shall be able to gracefully handle any feasible set of inputs, any errors that can be generated by internal components such as system calls, database queries, or any other internal functions. For example: • when errors occur, the site should respond with a specifically designed result that is helpful to the user without revealing unnecessary internal details • error messages must be produced in meaningful, plain English, and logged so that their cause can be reviewed.	**E**	Out of the Box
NFR-USE-016	The component/(s) shall include progress indicators while performing functions greater than 2 seconds.	**E**	Out of the Box

1. Change Request Form

CHANGE REQUEST BRIEF DETAILS

Change Request Number	6
Date of Change Request	06/10/17
Originator of need for Change Request	Customer
Proposed Implementation Date of Change	06/10/17
Date of expiry of validity of Change Request	Not Applicable
Contractor's estimated time and cost of evaluation	Not Applicable
Amount agreed to be paid to the Contractor for evaluating the draft Change Request, if any **(This applies only if the Customer is the Party that originated the need for a Change Request; and the Contractor estimates the cost of evaluating and drafting the Change Request exceeds 2 Business Days)**	Nil

CHANGE REQUEST HISTORY LOG

Change Request Version History

Date	Issue Version	Status/Reason for New Issue	Author

DETAILS OF CHANGE REQUEST

Summary

1. The Customer is establishing a new Rail Operations Centre (ROC).

2. The Customer wishes to procure the design, installation, testing and implementation of new technologies at the Site which will replace the current rail operation technology and provide enhanced capability to improve key 'day of operations' processes (**the Project**).

3. An ECI Contract was entered into by the Parties in relation to the Project on 24 December 2014. The output of the ECI Contract was a High Level Solution Design and BAFO. That ECI Contract was separate to this Customer Contract.

4. On 15 October 2015 this Customer Contract was entered into by the Parties as the 'Detailed Design Contract'. The Detailed Design Contract refined the technical scope of the IMS that was developed in the ECI Contract.

5. Change Request 1 to this Customer Contract was executed on or about 25 February 2015 to provide additional funding for Release 1 Detailed Design and additional funding for Release 1 implementation work.

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6. Change Request 2 to this Customer Contract was executed on or about July 2016 to add in REM Mobile functionality and system administration services.

7. Change Request 3 to this Customer Contract provided for REM Mobile deployment services and REM 2016.2 development and delivery incorporating Customer requirements.

8. Change Request 4 to this Customer Contract was executed to expand the scope of work under the PIPP to include all work from Detailed Design for Release 1 through to testing and implementation of Release 1.

9. Change Request 5 to this Customer Contract was executed to expand the scope of work under the PIPP to include all work from Detailed Design of Release 1-Tranche 2 through to testing and implementation of Release 1-Tranche 2.

10. This Change Request will amend the Customer Contract (including the PIPP) so that:
    (a) The scope is expanded to include the addition of Windows 7 as a target Standard Operating System (SOE) including the update or addition of relevant deliverables and services; and
    (b) the CAPS Mobile Deployment Software service is extended

11. The Parties intend that:
    (a) this Change Request takes effect so that the Customer Contract is varied with effect from the "Proposed Implementation Date of Change" specified on the cover of this Change Request;
    (b) the Customer Contract as amended by this Change Request continues in full force and effect;
    (c) all rights and liabilities of the Parties under this Customer Contract prior to the "Proposed Implementation Date of Change" are as set out in this Customer Contract as it existed prior to the date of this Change Request;
    (d) nothing discharges, prejudices, releases or otherwise affects any liability, obligation or accrued right arising under the Customer Contract prior to the "Proposed Implementation Date of Change"; and
    (e) this Change Request is intended only to vary the Customer Contract and not to terminate, discharge, rescind or replace it.

12. The documents attached to this Change Request show the Customer Contract as it exists after this Change Request is implemented. Subject to paragraph 14, the marking up shows the changes from the Customer Contract as it existed immediately prior to this Change Request.

13. The Parties acknowledge that the PIPP attached to the Change Request may not be a fully consolidated PIPP, and that some content from previously performed activities may be missing. The parties have proposed creating a consolidated PIPP following execution of this Change Request including all activities that were set out in:
    (a) The PIPP as attached to the original Customer Contract;
    (b) The PIPP attached to Change Request 1;
    (c) The PIPP attached to Change Request 2;
    (d) The PIPP attached to Change Request 3;
    (e) The PIPP attached to Change Request 4;
    (f) The PIPP attached to Change Request 5; and

(g) The PIPP included in Attachment 1 to this Change Request.

If a consolidated PIPP is not agreed, then the Parties acknowledge that their obligations under this Customer Contract at any point in time are as set out in the PIPP attached to the Customer Contract at that point in time.

SCOPE

The scope of this CR5 includes adding to the Customer Contract additional or updated services and deliverables including testing in relation the REM application running on and additional operating system (Windows 7) and extension of the CAPS service.

EFFECT OF CHANGE ON CONTRACT SPECIFICATION

The effects of CR6 are as shown in mark-up in the contract documents contained in Attachment 1 to this Change Request.

EFFECT OF CHANGE ON PROJECT TIMETABLE

The Project Schedule remains unchanged.

New PIPP (annexed)

The current PIPP is replaced in its entirety as set out in Attachment 1 to this Change Request. As noted above, that PIPP may not include a complete restatement of all Deliverables from the date of execution of the Customer Contract. A consolidated PIPP will be prepared following signing of this Change Request.

EFFECT OF CHANGE ON CHARGES AND TIMING OF PAYMENT

The effect of CR6 is to;

a) increase the value of this Customer Contract by [redacted](excluding GST) to [redacted] (excluding GST); and
b) Incorporate a rate card for the CAPS service and include relevant invoice details under section 23.4

Please refer to Section 23 of the updated PIPP in Attachment 1 for a full break down of the relevant Prices.

CHANGES TO CSI

Addition of the relevant SOE as CSI under section 22.1.2.

CHANGES TO CUSTOMER PERSONNEL

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

CHANGES TO CUSTOMER ASSISTANCE

No change.

PLAN FOR IMPLEMENTING THE CHANGE

Not applicable.

THE RESPONSIBILITIES OF THE PARTIES FOR IMPLEMENTING THE CHANGE

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

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Responsibilities of the Contractor

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

Responsibilities of the Customer

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT ON ACCEPTANCE TESTING OF ANY DELIVERABLE

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

EFFECT OF CHANGE ON PERFORMANCE OF ANY DELIVERABLE

None.

EFFECT ON USERS OF THE SYSTEM/SOLUTION

None.

EFFECT OF CHANGE ON DOCUMENTATION DELIVERABLES

Additional documentation will be supplied for Release 1-T2 as detailed in the updated PIPP set out in Attachment 1 to this Change Request.

EFFECT ON TRAINING

Refer to the revised PIPP set out in Attachment 1 to this Change Request.

ANY OTHER MATTERS WHICH THE PARTIES CONSIDER IMPORTANT

None.

ASSUMPTIONS

None.

LIST OF DOCUMENTS THAT FORM PART OF THIS CHANGE REQUEST

The following documents contained in Attachment 1 (or Attachment 2 for a clean version) form part of this Change Request (in addition to this Change Request Form):

(a) the revised PIPP.

CUSTOMER CONTRACT CLAUSES, SCHEDULES AFFECTED BY THE PROPOSAL ARE AS FOLLOWS:

The Customer Contract is amended as set out in the documents set out in Attachment 1 to this Change Request. The amendments are shown in mark-up. A clean copy of the Customer Contract is also attached in Attachment 2.

AUTHORISATION

Once signed by both Parties, the Customer Contract is updated by this Change Request and any provisions of the Customer Contract that conflict with this Change Request are superseded.

SIGNED AS AN AGREEMENT

Signed for and on behalf of [insert name of Customer]

Sydney Trains (ABN 38 284 779 682)

By *[insert name of Customer's Representative]* but not so as to incur personal liability

Signature of Customer Representative

LEN BLAULMORE

Print name

24 /10 /2017

Date

Signed for and on behalf of [*insert Contractor's name and ACN/ABN*]

Frequentis Australasia Pty Ltd (ABN 25 107 550 489)

Signature of Authorised Signatory

MARTIN RAMDL

Print name

20th OCT 2017

Date

Attachment 1 – PIPP

Attachment 2 – Clean Contract Document

Schedule 12: PIPP

Version control sheet

Document Version	Date	Edited by	Reason/nature of changes
0.1	14/09/2017	ST	Creating first draft of CR6
0.4	28/09/17	ST	Incorporate changes and clean up
0.5	28/09/2017	FRQ	**Review of inputs by ST**
0.6	28/09/2017	ST/Freq	**Address outstanding comments**
0.7	29/09/2017	ST	Draft CAPs wording

TABLE OF CONTENTS

Section A – Overview

1 Introduction

1.1 The Customer is establishing a new Rail Operations Centre (**ROC**)

1.2 The Customer wishes to procure the design, installation, testing and implementation of new technologies at the Site which will replace the current rail operation technology and provide enhanced capability to improve key 'day of operations' processes (the **Project**).

1.3 The Project consists of the development of three new technology systems (the **Applications**). These Applications include:

a) DTTS provided by Quintiq Pty Ltd;

b) IMS provided by the Contractor; and

c) CIMS provided by Thales Australia Limited.

1.4 The Customer has engaged Ajilon Australia Pty Ltd as its Systems Integrator, responsible for acting as the Customer's agent to oversee the technical management of the Project (the **Systems Integrator**).

1.4A The Parties acknowledge that this Customer Contract has been developed as follows:

a) an ECI Contract was entered into by the Parties on 24 December 2014. The output of the ECI Contract was a High Level Solution Design and BAFO;

b) on 15 October 2015 this Customer Contract was entered into by the Parties as the 'Detailed Design Contract. The Detailed Design Contract refined the technical scope of the IMS that was developed in the ECI Contract;

c) Change Request 1 was executed on or about 25 February 2015 to provide additional funding for Release 1 Detailed Design and additional funding for Release 1 implementation work;

d) Change Request 2 was executed in July 2016 to add in REM Mobile functionality and system administration services;

e) Change Request 3 was executed to provide for REM Mobile deployment services and REM 2016.2 development and delivery incorporating Customer requirements; and

f) Change Request 4 was executed to expand the scope of work under the PIPP to include all work from Detailed Design for Release 1 through to testing and implementation of Release 1.

g) Change Request 5 was executed to expand the scope of this PIPP is from Detailed Design for Release 1 through to implementation of Release 1 and Detailed Design for Release 1-Tranche 2 through to the implementation of Release 1-Tranche 2.

As at the date of Change Request 6, the scope of this PIPP covers testing in relation the REM application running on and additional operating system (Windows 7) and extension of the CAPS service being delivered under CR5.

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1.5 By implementing the Project the Customer wishes to achieve the following objectives:

Objective	SMART Criteria
Reduced delay times and improved confidence in rail: Improved processes, systems and relationships between 'day of operations' functions resulting in faster identification and allocation of incidents, allowing faster incident resolution and service restoration.	**Reduced Initial Delay**: Improvements to the management of incidents will reduce the time taken to get "back on the move", reducing the duration of the initial delay of incidents by an average 15% by 2018.
Increased operational performance and opportunity for timetable enhancements: Providing the capability to recover services more quickly following incidents and to sustain punctuality at higher timetable frequencies and with faster running times.	**Reduced Consequential Delay:** Improvements to the management of service disruption will reduce the contagion of perturbations of incidents and the time taken to get the services back to normal following the resolution of an incident. This will place less demands on timetable recovery margins. The Project will reduce the consequential delays caused both during and following the initial incident by 7% by 2018.
More accurate, timely, relevant and consistent customer information during delays: Improving the customers' ability to make decisions about their transport options.	**Reduced Customer Perceived Delay:** Improvements to the timeliness, relevance and consistency of customer information, particularly during disruption, will reduce the customers' perceived time of their journeys by 11% by 2018.
Better realising the benefits of future investments in rail capacity: Ability to realise ongoing network efficiency strategic initiatives including North West and South West Rail Links, new rolling stock, new signalling technologies, new network configuration and increased train service levels.	**Creation of a flexible, scalable network control function:** The ROC is sized to meet all future foreseeable colocations (i.e. all signalling control) with additional overflow area for migration and stage working during changes (e.g. parallel working, proof of concept, training etc). The ROC design uses standardised desk configurations that are moveable. Increased use of modular equipment and technology streamlining further facilitates change. This intangible benefit is encapsulated in the ROC infrastructure design requirements.
A new world-class operating centre and culture: Transforming the way 'day of operations' activities are managed within the Customer, fostering a new culture of collaboration and efficient coordination.	**Improved Business Environment:** The ROC will deliver closer collaboration, improved internal communication and the creation of a shared culture in an environment designed around key cultural goals. This intangible benefit will be measured through a Business Environment Scorecard and delivered as part of the Change Management Plan.
Improved customer service: Providing the capability to support and enable a new 'customer service model' that will improve customer service and business performance.	**Reduction in OPEX:** The implementation of a Customer Information Management System with enhanced capability for station staff. This will enable the new 'customer service model'.
Improved efficiency and sustainability: Providing opportunities for 'day of operations' role re-design and consolidation.	**Reduction in OPEX:** enabled by new systems, process improvements and colocation.

1.6 This PIPP sets out the scope of the Services and Deliverables that the Contractor will supply in respect of design, build, test and deployment of IMS component of the Project.

2 Overview of Scope of Work and Project Delivery Model

2.1 Phased Approach

2.1.1 The Project shall be delivered as a multi-release project comprising the following releases:

a) **Release 1**: IMS implemented as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the Contractor, as well as customised TIBCO middleware delivered by the Systems Integrator. The Customer's AAD of Release 1 will be when IMS achieves 45 days of Clear Running in the Production Environment.

b) **Release 1-T2**: Enhanced IMS implemented as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the Contractor, as well as customised TIBCO middleware delivered by the Systems Integrator. The Customer's AAD of Release 1-T2 will be when IMS achieves 45 days of Clear Running in the Production Environment.

c) **Release 2**: CIMS implemented separately as a standalone system into the Customer Environment. This entails the provision of Licensed Software by the CIMS Key Contractor, as well as customised middleware delivered by the Systems Integrator.

d) **Release 3**: the integration of the Applications with each other and into the Customer Environment. This entails the provision of upgraded Licensed Software by the Contractor, as well as additional customisation of middleware delivered by the Systems Integrator. Release 3 involves the implementation of the System. The Customer's AAD of Release 3 will be when IMS achieves 45 days of Clear Running in the Production Environment.

e) **Release 4**: the deployment of the System into the Site, being the Rail Operations Centre in Alexandria, NSW, Australia or such other location as specified by the Customer to the Contractor in writing from time to time.

2.1.2 Release 1 – Tranche 2 is the second release of the REM which was previously intended to be carried out as part of a later release (being Release 3). Release 1-T2 will now be deployed as a stand-alone release into the Customer Environment. For the purposes of Release 1-T2, Thales Australia Limited is not a Key Contractor (as that term is defined in the Additional Conditions).

2.1.3 As at the date of Change Request 6, this Customer Contract is for Release 1 and Release 1-T2 only. The Parties acknowledge and agree later releases may be incorporated into this Customer Contract by way of a Change Request once the scope for those later releases has been agreed.

2.1.4 Included in the initial three releases will be the following activities:

a) **Detailed Design**: Detailed Design for Release 1 of IMS and Release 1-T2 is part of this Customer Contract.

b) **Build Phase**: comprising the configuration and customisation of the Licensed Software by the Contractor. This phase additionally involves customisation of the TIBCO middleware by the Systems Integrator.

c) **Data Phase**: which is a subset of the Build Phase and comprises the identification and configuration of data required to enable the Licensed Software to achieve full functionality and performance. The majority of this work is performed by the Systems Integrator with the Contractor providing necessary assistance.

d) **Testing Phase**: comprising testing performed at the Contractor's site, as well as testing performed in conjunction with the Systems Integrator and Customer at the Site.

e) **Deployment**: comprising all necessary activities required to install the Licensed Software into the Customer Environment.

f) **Maintenance and Support**: commences when the Licensed Software provided in each Release Goes Live in the Production Environment. Maintenance and Support is contained in a separate contract between the Customer and the Contractor.

2.1.5 The Contractor must:

a) supply the Services and Deliverables described in this PIPP and any additional Services and Deliverables agreed by the Parties as being the responsibility of the Contractor; and

b) perform all other services, functions, activities, tasks and responsibilities not specially identified in this PIPP but which are:

i) reasonably related to the Services or Deliverables described in this PIPP; or

ii) reasonably required for the supply of the Services and Deliverables described in this PIPP.

3 Delineation of Responsibilities

3.1 Role of the Customer

3.1.1 The Customer is responsible for:

a) establishing all necessary contractual arrangements with the Key Contractors;

b) providing commercial management of the Systems Integrator and the Key Contractors;

c) providing access to the systems required by the Contractor as set out initially in the Initial Requirements and now in the Updated Requirements;

d) providing the necessary CSI required by the Contractor in a timely manner (including any software reasonably required by the Contractor); and

e) provisioning and setting up of hardware on which the Licensed Software will be hosted as detailed in Module 3.

Customer Supplied Items to be provided by the Customer are detailed in section 22.

3.2 Role of the Contractor

3.2.1 The Contractor must:

a) support the Systems Integrator as necessary to implement the Project;

b) collaborate with the Customer and the Key Contractors;

c) customise and/or configure the Licensed Software to deliver the Customer's functional and non-functional requirements agreed for the relevant Release;

d) provide the relevant version of the Licensed Software as applicable to the relevant Release;

e) provide suitably experienced and qualified Personnel;

f) provide all Services detailed in this Customer Contract; and

g) provide all Deliverables detailed in this Customer Contract,

as further described in this PIPP.

3.3 Role of the Systems Integrator

3.3.1 The Systems Integrator shall:

a) act as the Customer's agent to manage the end to end delivery of the System;

b) use all reasonable endeavours to resolve disputes at the technical level prior to following the escalation path detailed in the governance model set out in Appendix J (to the extent of any inconsistency between clause 22 and Appendix J, Appendix J will prevail);

c) to the extent detailed in this PIPP, consult, liaise or manage the Services and Deliverables provided or performed by the Key Contractors;

d) oversee the implementation of Release 1 and Release 1-T2;

e) configure the TIBCO middleware to enable integration of REM into the Customer Environment; and

f) provide suitably experienced and qualified Personnel.

4 Definitions

Capitalised terms which are not defined in this PIPP have the meaning given to them in the Order Documents or otherwise in the Customer Contract. In this PIPP, unless the context requires otherwise:

AAD means 45 days of Clear Running after the Licensed Software is in the Production Environment as further specified in Section 2.1.1 of this PIPP.

Build Phase means:

a) for Release 1: the phase described in Section 8 of this PIPP; and

b) for Release 1-T2: the phase described in section 14 of this PIPP.

CIMS means the Customer Information Management System.

CAPS means Critical Application Platform Services. CAPS is a software tool used by Frequentis for the configuration of the Licensed Software for testing in the non-production environment.

Clear Running occurs when the Licensed Software achieves uninterrupted performance in the Production Environment without a Severity 1 or Severity 2 Defect (as defined in section 9.7 of the PIPP and section 16.6 of the PIPP) arising. For the avoidance of doubt, Clear Running only applies to the performance of the Contractor's Licensed Software and not the configuration of the Customer's data, TIBCO middleware, Customer's Environment nor any 3rd party product or service.

Configuration and Customisation means the activities to be undertaken during the Build Phase, as described in Section 7.3 and section 14 of this PIPP.

Cross Stream Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract of this PIPP.

Customer Environment means the equipment, software, systems and other infrastructure owned, leased or licensed by the Customer with which the System must integrate, be compatible and interoperate.

Data Cleansing means the process of detecting and correcting corrupt or inaccurate records of a Customer supplied data set.

Data Configuration means manipulation of the customer data in to an appropriate format to meet the requirements set out in section 8.4 and section 15.4 of this PIPP and the successful insertion of the data into the System.

Data Management means the activities described in Section 8 and section 15 of this PIPP.

Data Phase means:

a) for Release 1: the phase described in Section 8 of this PIPP; and

b) for Release 1-T2: the phase described in Section 15 of this PIPP.

Data Profiling means the identification and extraction of source date relating to IMS from the Customer's system as further described in Section 8.3.1 and section 15.2.1of this PIPP**.**

Data Profiling Team means the Systems Integrator's team responsible for Services and Deliverables as detailed in Section 8.3.1 of this PIPP.

Deployment (Release 1) Phase means the phase described in Section 10 of this PIPP.

Deployment (Release 1-T2) Phase means the phase described in Section 17 of this PIPP.

Detailed Design Contract means the Contract entered into by the Customer and Contractor dated 15 October 2015.

Detailed Design Documents means:

a) each document that is developed by the Contractor as part of the High Level Solution Design Phase, the Detailed Design (Release 1) Phase and the Detailed Design (Release 1 – Tranche 2) Phase and accepted by the Customer; and

b) the detailed functional specifications and technical specifications for the System developed by the Contractor during the Build and Test Phases for Release 1 and Release 1-T2 and accepted by the Customer.

The Detailed Design Documents set out the overall scope of the System as updated or replaced from time to time in accordance with this PIPP or otherwise in accordance with the Customer Contract.

Detailed Design Phase means:

a) for Release 1, the Detailed Design (Release 1) Phase; and

b) for Release 1-T2, the Detailed Design (Release 1-T2) Phase.

Detailed Design (Release 1) Phase means the phase described in Section 5 of this PIPP.

Detailed Design (Release 1-T2) Phase means the phase described in Section 13 of this PIPP.

DMC means Data Management Client; the REM thick client for configuration management supplied by the Contractor.

DTBRS means the Detailed Technology Business Requirements Specification developed by the Customer during the Detailed Design Phase and updated from time to time.

DTTS means the Day of Operations Timetable System provided to the Customer by Quintiq Pty Ltd.

ECI Contract means the Early Contractor Involvement Contract that was entered into by the Parties on 24 December 2014.

EMC means Emergency Management Client.

ERD means Entity Relationship Diagram.

ERM means Enterprise Release Management.

Entry Criteria for a Phase means the criteria that must be met before the Contractor is entitled to commence the work for that Phase, as set out in this PIPP.

Go Live means, when IMS has been deployed into the Production Environment and is ready for operational use.

High Level Solution Design Phase means the phase undertaken during the ECI Contract from which, amongst other Deliverables, the High Level Detail Design and BAFO were provided to the Customer by the Contractor.

HP ALM means Hewlett Packard Application Lifecycle Management.

IMS means the Incident Management System provided by the Contractor to the Customer under this Customer Contract and as set out in the Initial Requirements.

Initial Requirements means the requirements set out in Appendix K of this PIPP.

Initial Data Load means priming of the Licensed Software with relevant customer data in the first instance.

Interface means each interface between IMS and the Customer Environment for Release 1 and Release 1-T2, and the Applications for Release 1-T2, unless specified otherwise and as detailed in the SAD in Appendix A and the Interface Specifications in Appendix A or as per outputs developed during the Release1-T2 Detailed Design Phase.

Interface Documentation means a description of each Interface, such as SIRI and Notification Interface, including XML schema definition where applicable detailed in the SAD in Appendix A and the Interface Specifications in Appendix A.

Issues Register has the meaning given to that term in Section 21.4.1 of this PIPP.

ITSM means the Contractor's Defect Reporting Tool.

Key Contractor means the Contractors engaged by the Customer to deliver their respective part of the ROC Technology Solution including the Systems Integrator.

Load and Performance Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

Master Data means a description of Master Data import definitions, in the form of an Excel spreadsheet describing the mandatory fields.

MDM means Mobile Device Management.

Non Production Environment means a non-operational environment for development and testing purposes into which the Software may be installed, which is not processing live data, which is not running any operations of the Customer and which has not been deployed to permit any users to access live data. Non-Production environments include development, hot and cold standby, high-availability, active-active (load balanced) environments and test environments.

Operational Acceptance Testing (OAT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents.

PIV means Post Implementation Verification which is an activity verifying that REM has been successfully deployed to the Production Environment, that it is ready for business operations to 'go-live' and that no deployment roll back is required.

Product means the licensed software provided by the Key Contractor.

Production Environment means the real-time staging of programs that run an organisation are executed, and includes the personnel, processes, data, hardware, and software needed to perform day-to-day operations

Program Maintenance Phase means the phase described in Section 12 of this PIPP.

Project has the same meaning given to that term in Section 1.2 of this PIPP.

Project Management Plan means the plan described in Schedule 2 of this Customer Contract.

Project Preparation Phase means the activities to be performed by the Contractor prior to initiating the Detailed Design Phase.

Project Schedule means the Project Schedule jointly developed by the Customer, the Contractor and Key Contractors detailing the activities to be performed, their interdependencies and the related timeframe for those activities and as updated from time to time by the Parties, the current version of which is set out in Appendix C.

REM means the Railway Emergency Management application provided by the Contractor and includes:

a) REM 2016.R1;

b) REM Mobile 2016.R1

c) REM 2016.R2;

d) REM Mobile 2016.R2;

e) REM 2017.R2; and

f) REM Mobile 2017.R2.

REM 2016.R1 means the Contractor's standard software delivered as a part of Release 1, customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM 2016.R2 means the Contractor's standard software delivered as a part of Release 1, customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM 2017.R2 means the Contractor's standard software delivered as a part of Release 1-T2 customised to meet the requirements and accompanying specifications outlined in the Requirements.

REM Data Model means a description of the REM data model in the form of an ERD.

REM Mobile 2016.R1 means the Contractor's standard software as customised to meet the Customer's Release 1 mobility requirements as documented in DTBRS for IMS Notifications version 0.3.

REM Mobile 2017.R2 means the Contractor's standard software delivered as a part of Release 1-T2 customised to meet the Customer's Release 1-T2 mobility requirements defined in the Requirements.

Requirements means for each of Release 1 and Release 1-T2, the Initial Requirements during the Detailed Design Phase or the Updated Requirements during the Implementation Phase.

Risk Management Plan means the plan described and set out in Appendix D of this PIPP.

ROC means the Rail Operations Centre.

ROC Technology Solution means the Day of Operations Timetable System, Incident Management System, Customer Information Management System and TIBCO middleware integrated into the Customer's Environment in accordance with the Customer's requirements.

Security and Penetration Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

SAD means the Solution Architecture Document detailed in Appendix A.

SOE means Standard Operating System, the version or versions of operating system the Customer uses, or will use, in the customer environment.

Software Build Documents means the following subset of Deliverables for Release 1-T2:

a) Functional Specification;

b) Architecture Specification; and

c) Integration Specification.

Systems Integration Testing (SIT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

System Testing (ST) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents) of this PIPP.

SIRI means Service Interface for Real-time Information, a protocol for that allows distributed systems to exchange real time information.

System means:

a) the Incident Management System supplied by the Contractor; and

b) TIBCO interfaces developed by the Systems Integrator,

as customised and configured in accordance with the Customer's Requirements.

Systems Integrator has the meaning in Section 1.4 of this PIPP.

System Testing has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

TEMS means Technical Environment Management Strategy.

Testing Phase means the phases described in Section 9 and section 16 of this PIPP.

TIBCO means *The Information Bus Company's* middleware product that provides integration, analytics and event information processing.

TMT means Test Management Tool.

TOM means Test Objective Matrix.

TSR means Test Summary Report as described in Section 7.4 and section 16.4 of this PIPP.

Updated Requirements means the Initial Requirements that are updated in the Detailed Design Documents.

Unit Testing (UT) has the meaning as defined in the ROC-BCT-SG-0001 v2.0_ROC Program Test Management Framework_(Approved) document described in Schedule 2 of this Customer Contract (Agreement Documents).

Validation means confirmation by examination and through provision of objective evidence that the requirements for a specific intended use or application have been fulfilled.

Verification means confirmation by examination and through provision of objective evidence that specified requirements have been fulfilled.

Web Portal means the REM thin client for read only incident investigations, audit log viewer and standby client.

Section B – Release 1

5 Detailed Design (Release 1) Phase

5.1 Overview

5.1.1 The purpose of the Detailed Design (Release 1) Phase is to document and confirm in the Detailed Design Documents all of the Requirements (based on the Initial Requirements) and develop the Detailed Design Documents for Release 1 of the System.

5.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1) Phase (as specified in Section 5.3) are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1) Phase (as specified in Section 5.4) are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

5.2 Entry Criteria

5.2.1 The Entry Criteria for the Detailed Design (Release 1) Phase are specified in the table below:

#	Criterion	Description
1	Previous Phase Discharged	All Services that the Systems Integrator is required to supply during the Project Preparation Phase have been supplied.
2	Previous Phase Deliverables	The Customer has approved all Deliverables in the Project Preparation Phase.

5.3 Services

5.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1) Phase:

#	Description
1	Implement and perform all the Detailed Design (Release 1) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Systems Integrator as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensuring all required Systems Integrator Personnel are present at the meeting(s); c. chairing and presenting the System meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtaining participant approval of contents.
2	Participate in all necessary workshops with the Customer, the Systems Integrator and all relevant Customer stakeholders: a. to clarify the Initial Requirements and validate those Initial Requirements; b. to identify any changes to those Initial Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1) Phase.
3	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1) Phase.
4	Develop the Detailed Design Documents for the System for Release 1.
5	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Requirements during the Detailed Design (Release 1) Phase and how the Systems Integrator configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of Release 1 to be implemented is understood by all parties.
6	Conduct a risk management workshop with the Customer, the Systems Integrator and all relevant Customer stakeholders to identify and agree on risks to Release 1.
7	Provide the Key Contractors with all the necessary assistance reasonably requested by the Key Contractors during the Detailed Design (Release 1) Phase.

#	Description
8	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the System) to enable the Key Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 5.4 of this PIPP.
9	Do all other things necessary to develop and supply the Deliverables described in section 5.4 of this PIPP and as otherwise directed by the Customer.

5.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1) Phase in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

5.4 Detailed Design Deliverables

5.4.1 The Systems Integrator is responsible for the following Deliverables with appropriate input from the Contractor (refer to Appendix F for allocation of accountabilities and responsibilities):

a) The Transformation and Change Deliverables specified in the table below are to be provided to the Customer during the Detailed Design (Release 1) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Systems Integrator during the High Level Solution Design Phase.

b) Where the Systems Integrator must contribute to a Deliverable specified in the table below, the Contractor must work with, contribute to and provide all reasonable assistance requested by the Systems Integrator to complete the relevant Deliverable.

c) The Systems Integrator must, in collaboration with the Key Contractors, supply the following Deliverables as part of the Detailed Design (Release 1) Phase. The approval of each Deliverable will be the responsibility of the Customer (or the Customer's nominee).

#	Deliverable	Description	Approval	Status as at 19 August 2016
Technology Deliverables				
1	Release 1 Architecture Specification	Release 1 Architecture Specification must describe the Release 1 solution, including systems, platforms and technology required to deliver the functional and non-functional requirements. The document will (where required) expand on the High-Level Design and should contain the following: Introduction: a. document overview; b. document inputs; and c. phase scope. Systems architecture: a. high level conceptual overview; b. level 2 business processes; c. application usage view; d. system integration view; e. application structure view;	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		f. information architecture (including reference data requirements); g. infrastructure usage view; h. implementation and deployment view; and i. manual integration. Rationale and justification for detailed design architectural approach: a. rationale; b. architecture risks; c. architecture issues; d. architecture constraints; e. architecture assumptions; f. architecture decisions; and g. architecture dependencies.		
2	Release 1 Functional Specification	The Release 1 Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the IMS meets the DTBRS that shall be developed by the Customer during the Detailed Design Phase. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)	Closed
3	Release 1 Non-Functional Design	The Release 1 Non-Functional Design developed during the High Level Solution Design Phase must be updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The Release 1 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability; e. manageability; f. performance; g. portability; h. reliability; i. reporting; j. scalability; k. security; and l. usability.	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
4	Release 1 Integration Specification	The Release 1 Integration Specification describes the high level integration points between the IMS and other systems in the Customer Environment. A detailed interface specification for each Interface will be created by the Systems Integrator during the Build Phase. The following subjects are included in the Release 1 Integration Specification, one entry for each integration service: a. high level data flows between applications to support the business processes; b. data objects required by consumer – request; c. data objects available from consumer – response; and d. data object transformations required. The Release 1 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new applications. The detailed interface specification for each Interface to be created by the Systems Integrator during the Build Phase will describe the relevant Acceptance Criteria for each Interface.	The Customer (or its nominee)	Closed
5	Project Communication Plan for Release 1	Contribute to the development of the Project Communications Plan for Release 1 being developed by the Systems Integrator. The Project Communications Plan for Release 1 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)	Closed
6	Release 1 Data Management Plan	This document defines: a. the design, build, control and data management activities required to ensure data quality of all data (reference data, master data and transactional data) within IMS, based on business rules provided by the Customer, and effective and efficient system integration of IMS with other systems in the Customer Environment; and b. a high-level approach to management of all data within IMS which aligns with the approach outlined in the SAD.	The Customer (or its nominee)	Closed
7	Release 1 Data	Contribute to Release 1 Data Technical Analysis.	The	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
	Technical Analysis Outputs	Outputs must include: a. Data Requirement Classifications (Master Data, Migration Data, BI data); b. Data Migration Requirements and Rules; and c. Data quality definition (at data attribute levels). Release 1 Data Technical Analysis Outputs also includes: 1. for each type of reference data and Master Data used by IMS (as appropriate): a. the real-world object type represented by that data set; b. the recommended data maintenance method(s) in IMS; c. the relevant SME(s), functional owner(s), source of requirement and/or Customer source from which the data may be obtained; d. whether IMS can play the role of DMA source for that data; e. the volatility of that data; and f. data translations (if any) required to integrate with existing Customer systems 2. for each type of master or reference data requested by IMS from other systems in the Customer Environment: a. what data is required in the request and response messages; b. the business rules governing each message; and c. how those business rules are enforced; 3. for each type of transactional data flowing between IMS and another system (in either direction): a. the source and target systems; b. the message type and message header type; c. any encryption, security or certification considerations; d. the methods used to handle non-compliant data in the source system; e. any record selection filters required; and f. any record level transformations required.	Customer (or its nominee)	
8	Updated Technology Implementation Strategy	Contribute to the development of the Updated Technology Implementation Strategy being developed by the Systems Integrator. The Updated Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in the High Level Solution Design Phase and as varied to reflect the Release 1 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the System, including, at a minimum: a. personnel and organisation; b. implementation approach, including: i. releases; ii. system Verification and Validation; iii. system change management; iv. release and deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for Go Live; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. Verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function.		
9	Release 1 Technology Implementation Plan (Template)	The Release 1 Technology Implementation Plan (Template) will be developed and agreed. The plan will outline the plan approach for the roll out of the relevant components for Release 1. The final version of Release 1 Technology Implementation Plan will be developed during the Build Phase and provide a detailed plan and schedule of activities to deploy the System into the Customer Environment. It must address training, development of, and installation of the IMS into the Customer Environment, handover to the Customer from the Contractor, Go Live and roll back. The final version must be provided at least 40 Business Days prior to the anticipated deployment date for Release 1.	The Customer (or its nominee)	Closed
10	Technology Test Strategy	Contribute to the development of the Technology Test Strategy being developed by the Systems Integrator. The Technology Test Strategy refers to the program test framework and must include the following: a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability; assumptions; test risks and constraints; c. Approach – How will the testing be carried out:	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where the each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; Defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document revision and history; and i. Approvals.		
11	Updated Project Management Plan	Contribute to the development of the Project Management Plan being developed by the Systems Integrator. Project Management Plan submitted by the Contractor during the High Level Solution Design Phase shall be used as the base document and will be updated to reflect the findings by the Contractor during the Detailed Design (Release 1) Phase. The Project Management Plan must specify, as a minimum, the following: a. current project status; b. project overview; c. scope and deliverables; d. solution approach, including: i. architecture and phase approach; ii. organisation change management; and iii. delivery approach; e. budget and schedule; f. dependencies; g. roles and responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 5.4 of this PIPP; and k. key risks and issues.	The Customer (or its nominee)	Closed
12	RACI	Contribute to the RACI Deliverables being developed by the Systems Integrator. The RACI must detail the deliverables and respective	The Customer (or its	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		obligations of the Systems Integrator, the Contractor, Key Contractors and the Customer. Note: the output of this Deliverable is included in Appendix F.	nominee)	
13	Agreed Final Contract	The Customer Contract will incorporate certain detailed design activities. The Customer Contract must be based on Procure ITv3.1 as amended by the Additional Conditions.	The Customer and Contractor	Closed
14	Detailed Implementation & Maintenance Phase PIPP	The Detailed Design, Implementation and Support PIPP is an enhanced version of the PIPP provided by the Contractor during the High Level Solution Design Phase, amended as a consequence of findings during the Detailed Design (Release 1) Phase.	The Customer and Contractor	Closed
15	Updated Release 1 Product Gap Analysis	The Updated Release 1 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Key Contractors (as applicable) during the Detailed Design (Release 1 Phase. The Updated Release 1 Product Gap Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)	Closed
16	Release 1 System Test Plan	Contribute to the Release 1 System Test Plan being developed by the Systems Integrator. The Release 1 System Test Plan describes how the testing will be delivered for the Release 1 System Test phase and must include: a. test plan identifier; b. references; c. introduction; d. test objectives; e. test items; f. software risk issues; g. features to be tested and traceability; h. features not to be tested and reasons; i. approach including the use of stubs, simulators etc; j. item pass/fail criteria (if different from strategy); k. suspension criteria and resumption requirements (if different from strategy); l. test deliverables;	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		m. environmental needs; n. staffing and training needs (if different from strategy); o. responsibilities; p. schedule of tasks and assigned staff; q. planning risks and contingencies; r. approvals; and s. glossary.		
17	Requirements Traceability Matrix updated for Release 1	Contribute to the Requirements Traceability Matrix Deliverable being developed by the Systems Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for Release 1 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other Deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	The Customer (or its nominee)	Closed
18	Technology Environment Management Strategy	Contribute to the development of the Technology Environment Management Strategy Deliverable being developed by the Systems Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. booking and reserving test systems; b. tracking environment changes; c. managing environment contention; d. code/defect management (code promotion processes); e. environment scheduling; f. configuration tracking; g. data management (extracts, transforms loads); and h. managing interdependent projects.	The Customer (or its nominee)	Closed
Transformation and Change Deliverables				
19	Operating Model	Contributing to the development of the Operating Model being developed by the Systems Integrator. The Operating Model must document and /or identify: a. best practice levels 2-4 process flows; and b. capability gaps in systems and processes.	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		The process model will conform to best practice principles. The Operating Model must: a. conform to industry best practice; and b. be documented in an agreed format that supports business process modelling methodology as well as be capable of maintaining multiple versions of the model to support a staged implementation. Processes will be jointly developed through workshops with the Customer and its nominated Personnel (such as SMEs) as determined by the Customer. **Best practice process flows Deliverable description**: The best practice process flows describes the new Release 1 level 4 processes that will be required based on the out of the box software technology processes. Release 1 level 2 and level 3 processes impacted by the new level 4 processes will also be updated. Any processes not impacted by the new level 4 processes will remain unchanged. The Operating Model must address the following: a. best practice levels 2-4 process flows; b. Validation of processes against real life scenarios. **Capability gaps in systems and processes Deliverable description**: Documentation of the gaps and/or variations in processes or capabilities between the current state process flows and the recommended best practice process flows to confirm the changes to processes and capabilities. The key focus of this Deliverable will be on the level 4 gaps and/or variations in processes as dictated by the out of the box software technology processes.		
20	Draft recommended ROC organisational structure	Contribute to the development of the draft recommended ROC organisational structure. The draft recommended ROC organisation structure must conform to best practice. The Contractor draft recommended ROC organisational structure will detail and define roles, detail and define position purpose and high level description(s).	The Customer (or its nominee)	Closed
21	Change Impact Analysis (Release 1)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1 related activities in the following dimensions : a. Business process/workflow; the way and extent	The Customer (or its nominee)	Closed

#	Deliverable	Description	Approval	Status as at 19 August 2016
		that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes within the ROC. A Change Impact Analysis will be provided prior to Release 1.		
22	Release 1 Training Needs Analysis	Contribute to the development of the Release 1 Training Needs Analysis being developed by the Systems Integrator. The Release 1 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1 solution. The Release 1 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during the Implementation & Maintenance Phase.	The Customer (or its nominee)	Closed

5.4.2 The Parties acknowledge and agree that the Detailed Design (Release 1) Phase Deliverables marked “Closed” above were received and accepted by the Customer during the Detailed Design Phase.

5.5 Exit Criteria

The Exit Criteria for Detailed Design (Release 1) Phase are:

#	Criterion	Description
1	Completion of all Detailed Design Deliverables	The Customer has accepted the Detailed Design Deliverables set out in section 5.4 of this PIPP.

6 Not used

7 Build Phase (Release 1)

7.1 Overview

7.1.1 The purpose of the Build Phase (Release 1) is to:

a) configure and customise the Licensed Software to fulfil the requirements specified in the Updated Requirements specified in Appendix A;

b) provide alpha and beta versions of the Licensed Software to the Customer to enable early visibility of the functionality of the Licensed Software; and

c) in collaboration with the Systems Integrator, customise the Licensed Software to interface with the TIBCO middleware and other Customer systems as detailed in the SAD.

7.1.2 The Contractor must ensure that:

a) all of the Services and Deliverables that it is obliged to supply under the Build Phase (Release 1) are supplied and completed;

b) it will work collaboratively with the Systems Integrator to deliver the Services and Deliverables; and

c) all Deliverables that it is obliged to supply under the Build Phase (Release 1) are accepted by the Customer, on or before the relevant date(s) specified in the Project Schedule.

7.2 Entry Criteria

7.2.1 The Entry Criteria for the Build Phase (Release 1) are specified in the table below:

#	Criterion	Description
1	Detailed Design (Release 1) Phase completed to necessary level to start the Build Phase (Release 1)	All Services that the Contractor is required to supply during the Detailed Design (Release 1) Phase have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1) Phase.

#	Criterion	Description
2	Technical Documents Approved	The Customer has accepted all Deliverables supplied in the Detailed Design (Release 1) Phase or, in the Customer's sole and absolute discretion, those Deliverables were at the necessary level to start the Build Phase (Release 1). Where one or more Deliverables in the Detailed Design (Release 1) Phase have not been accepted by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.

7.3 Services

7.3.1 Subject to section 7.2, the Contractor must supply the following Services for the Build Phase (Release 1):

#	Description
1	**Licensed Software (REM 2016.R1)** The Contractor shall Customise the Contractor's standard Licensed Software as detailed in the Initial Requirements in Annexure A to develop REM 2016.R1.
2	**Licensed Software (REM Mobile 2016.R1)** The Contractor shall Customise the Contractor's standard Licensed Software detailed in the Initial Requirements in Annexure A to address the Release 1 Mobility requirements documented in DTBRS for IMS Mobile Notifications Version 0.3
3	**Licensed Software (REM 2016.R2)** Customisation of REM 2016.R2 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2 based on the DTBRS which incorporates REM Release 2016.R2 and REM Mobile 2016.R2.
4	**Licensed Software (REM Mobile 2016.R2)** Customisation of REM Mobile Release 2016.R2 to enable the next release of the Licensed Software to fulfil the specifications as defined in the GAP Analysis and Functional Specification for REM Release 2016.R2 and REM Mobile 2016.R2 based on the DTBRS which incorporates REM Release 2016.R2 and REM Mobile 2016.R2.
5	**Licensed Software (QR Code Configuration)** Customisation of REM Mobile 2016.R1 to enable configuration by QR code as defined in the REM Technical Infrastructure Design_NGIS v05 document for testing in the Non-Production Environments.
6	**System Testing** The Contractor will perform testing of the REM products at their development site and in accordance with the Contractor's existing in house processes. The Contractor shall provide the TSR to demonstrate, to the Customer's satisfaction, that the Licensed Software has been subjected to an appropriate level of testing to ensure it is fit for purpose.
7	**TIBCO Interfaces** As required, the Contractor shall support the Systems Integrator, including provision of technical advice and assistance to enable the Systems Integrator to develop the interfaces for TIBCO.

#	Description
8	**Data Profiling** The Contractor shall support the Customer and Systems Integrator's data profiling team as detailed in Section 8.3.1, to identify and extract data for use with the IMS.
9	**REM Installation** The Contractor shall install the Licensed Software in the Customer Environment to enable the Parties to enter SAT.
10	**Data Configuration – System** The Contractor shall support the Systems Integrator as required to undertake configuration of the data as required by the Customer to enable the Test Phase to commence.
11	Implementation of application parameters to: a. download the required parameters for a number of different configurations; b. provide respective links for QR-Code configuration capability; c. implement a setting to switch off QR code capability for production rollout.
12	Signature process services including: a. providing a REM Mobile 2016.R2 certificate for the use on a maximum of twenty Sydney Trains owned test-devices; and b. management of iPhone UDID's. Service provided until December 15 2016 unless otherwise extended in writing between the Parties.
13	Configuration process services including: a. Creation of new QR codes referring to new parameter sets for different test scenarios and/or non-production environments; b. Set-up and managing the deployment tool (Hockey) for the non-production environment; and c. Configuration of REM Mobile 2016.R1 using CAPS for Sydney Trains non-production environments. Service provided until December 15 2016 unless otherwise extended in writing between the Parties.
14	Deployment process services including: a. Providing a signed application file (*.ipa file) for management in Hockey. i. This file can be uploaded to Hockey without further modification. ii. This file can be re-signed and rolled out by the customer using the customer's MDM tool, without any further modification b. Management of Hockey and configuration of REM Mobile 2016.R2 using CAPS for Sydney Trains non-production environments. i. Includes rollout management. Service provided until December 15 2016 unless otherwise extended in writing between the Parties.

7.4 Build Deliverables

Updates to Detailed Design Deliverables

7.4.1 The following Deliverables that were previously provided by the Contractor shall be updated, if required, during the Build Phase (Release 1) to reflect, alternative approaches to the build, or delivery of the Services, or technological issues not contemplated during the High Level Solution Design Phase and/or the Detailed Design Phase.

7.4.2 The Contractor must supply, or provide input into the following Deliverables as set out in the RACI. The Contractor shall provide all reasonable input and feedback to the Systems Integrator to ensure the Deliverables are fit for purpose.

#	Deliverable	Description
1	Release 1 Architecture Specification	The updated Release 1 Architecture Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1).
2	Release 1 Non-Functional Design	The updated Release 1 Non-Functional Design will reflect the design of the "as built" System developed during the Build Phase (Release 1).
3	Release 1 Integration Specification	The updated Release 1 Integration Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1).
4	Test Strategy	The updated Test Strategy will reflect the approach agreed between the Customer, Contractor and Systems Integrator to implement IMS for Release 1.
5	Project Management Plan	The updated Project Management Plan will reflect lessons learnt during Release 1, as well as revision in the approach to project management agreed between the Parties during the Build Phase (Release 1).
6	RACI	The updated RACI shall reflect additional Services and Deliverables identified for Release 1.
7	Technology Environment Management Strategy	The updated Technology Environment Management Strategy will reflect the lessons learnt during Release 1, as well as revision in the approach to environment management agreed between the Parties during the Build Phase (Release 1).
8	Data Technical Analysis Output (DTAO)	The Updated Data Technical Analysis Output (DTAO) will reflect the "as built" System as defined during the Build Phase (Release 1).
9	Data management Plan	The updated Data Management Plan will reflect the design of the "as built" System developed during the Build Phase (Release 1).
10	Technology Communications Plan	The updated Technology Communications Plan will reflect lessons learnt during Release 1, as well as revision in the approach to project communications agreed between the Parties during the Build Phase (Release 1).

New Build Deliverables

7.4.3 The Contractor must, in collaboration with the Systems Integrator, supply the following Deliverables as part of the Build Phase (Release 1).

#	Deliverable	Description
1	Technology Implementation	The Contractor will contribute to the development of the Technology Implementation Plan being developed by the Systems Integrator. The Contractor shall base its response on the Technology Implementation

#	Deliverable	Description
	Plan	Template agreed between the Parties during Detailed Design. The Technology Implementation Plan will detail and schedule the activities to deploy REM 2016.R1 and REM Mobile 2016.R1 into the Customer Environment. It must additionally address training, development of, and installation of the IMS into the Customer Environment, as well as handover to the Customer from the Contractor, Go Live and roll back (from the technology perspective).
2	Interface Documentation for SIRI (REM 2016.R1)	The Contractor will develop the REM SIRI SX Interface Documentation that includes: a. detailed mapping documentation of REM Data Model to SIRI SX Data Model; b. XML Schema Definition (XSD) for REM Incident SIRI extension; c. architecture overview / data flow diagram; d. description of configuration options for SIRI SX REM Server module; e. description of configuration options for REM DMC; and f. SIRI SX message samples. The Contractor will collaborate with the Systems Integrator to ensure the Systems Integrator interface documentation aligns with the interface documentation developed by the Contractor.
3	Shadow Data Base Documentation	The Contractor will develop the Shadow Data Base Documentation that includes the description of the Functional Data Model including: a. master data, for example: i. users/roles; ii. contacts, occupational groups; iii. responsibility model; and iv. location configuration (location, route, route section). b. transactional data, for example: i. incidents; ii. operational consequences; and iii. tasks.
4	Interface Documentation for Notification Functionality (REM 2016.R1)	The Contractor will develop the Interface Documentation for Notification Functionality that shall include: a. restful interface specification comprising: i. URL scheme and parameter specification; ii. specification of authentication mechanism; and iii. interface versioning specification; b. XML Schema Definition (XSD) for service request/response messages; c. HTTP code specification for request/response messages; and d. request/response messages samples.
5	Documentation of the REM Data Model (REM 2016.R1)	The Contractor will develop the Documentation of the REM Data Model that shall include: a. ERD; b. Detailed entity documentation (column names, data types); c. Common attributes for: i. all data types (e.g. deactivated by, deactivated_ts, optlocking); ii. versionised REM Master Data (e.g. version_id, valid_from, valid_to); iii. imported REM Master Data (e.g. valid_from, valid_from, valid_to);

#	Deliverable	Description
		and iv. data versioning principles
6	User Manual for Emergency Management Client (EMC) (REM 2016.R1)	The Contractor shall develop the User Manual for Emergency Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the EMC.
7	User Manual for Data Management Client (DMC) (REM 2016.R1)	The Contractor shall develop the User Manual for Data Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the DMC.
8	User Manual for Web Portal (REM 2016.R1)	The Contractor shall develop the User Manual for Web Portal that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the Web Portal.
9	User Manual for REM Mobile (REM Mobile 2016.R1)	The Contractor shall develop the User Manual for REM Mobile 2016.R1 that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the mobile application.
10	IMS (REM 2016.R1) Licensed Software	The Parties acknowledge the Licensed Software was a Deliverable supplied in the Initial Implementation (Release 1) Phase of the Detailed Design Contract.
11	Licensed Software (REM Mobile 2016.R1)	The Contractor delivered the REM Mobile 2016.R1 Licensed Software to the Customer prior to 31 May 2016. **Note:** The Parties acknowledge the Licensed Software was a Deliverable supplied in the Initial Implementation (Release 1) Phase of the Detailed Design Contract.
12	System Test Summary Report (2016.R1)	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results in general composition contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; and iii. deviations from the plan; c. Defect summary
13	REM Mobile Software Update (QR Code deployment) (2016.R1)	Customisation of REM Mobile 2016.R1 to enable configuration by QR code as defined in the REM Technical Infrastructure Design_NGIS v05 document.
14	Configuration Process Documentation (2016.R1)	Documentation including details regarding the QR code functionality and how to change a configuration.
15	Deployment Process	Documentation of the required steps to configure the application (*.ipa file) in CAPS and deployment of REM Mobile 2016.R1 onto Customer iPhones

#	Deliverable	Description
	Documentation (2016.R1)	with the use of Hockey.
16	Hand-Over to Support Documentation (handover of non-production processes & procedures) (2016.R1)	The Hand-Over to Support Documentation covers all necessary information for the non-production mobile deployment services to be taken over by the Customer. A one day hands-on handover training.
17	Update of REM Mobile Functional Specification (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
18	Update of REM Mobile Test Objective Matrix (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
19	Update of REM Mobile User Manual (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
20	Update of Requirements Traceability Matrix (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
21	Update of GAP Analysis (2016.R1)	Update of documentation as a result of the activities undertaken for the non-production REM Mobile deployment. Document will be updated by way of addendum.
22	REM System/Software Delivery (REM Release 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM IMS as defined for Software Delivery REM Release 2016.R2.
23	REM System/Software Delivery (REM Mobile 2016.R2)	Installation files, database update scripts and documentation for the deployment of REM Mobile as defined for Software Delivery REM Mobile 2016.R2.
24	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	Contractor will Update the GAP Analysis for REM and REM Mobile Release 2016.R2 The GAP Analysis (REM and REM Mobile 2016.R2) shall be based on the DTBRS to reflect the findings by the Contractor/Other Contractor (as applicable) during the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase. The GAP Analysis Deliverable specifies the gaps between Release 1 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.
25	Update of	Contractor will Update the REM and REM Mobile Release 2016.R2

#	Deliverable	Description
	Functional Specification (REM and REM Mobile Release 2016.R2)	Functional Specification document. The Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the REM IMS meets the DTBRS. Functional specifications relate to the following: a. Function involving user interaction and its user interface; and b. Function which is unattended processing such as batch processing.
26	Interface Documentation for SIRI (REM 2016.R2)	Contractor will update of the documentation to reflect changes implemented as a part of REM 2016.R2.
27	Interface Documentation for Notification Functionality (REM 2016.R2)	Contractor will update of the documentation to reflect changes implemented as a part of REM 2016.R2.
28	Update of Documentation of the REM Data Model	Contractor will update the Data Model Documentation to reflect changes implemented as a part of REM 2016.R2.
29	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
30	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
31	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	Contractor will update of the User Manual to reflect changes implemented as a part of REM 2016.R2.
32	Requirements Traceability Matrix for REM 2016.R2	The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for REM 2016.R2 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases.
33	Test Summary Report for System Test (REM Release 2016.R2)	Contractor will provide a summary of results from the COTS product vendor System Testing for REM 2016.R2 including a list of observations and defects in accordance with the COTS vendors' standard documentation.
34	Test Summary Report for System Test (REM Mobile 2016.R2)	Contractor will provide a summary of results from the COTS product vendor System Testing for REM Mobile 2016.R2 including a list of observations and defects in accordance with the COTS vendors' standard documentation.

7.5 Exit Criteria

#	Criterion	Description
1	Environment	For each environment type (as described in the TEMS and Environment Specification), the Customer has provisioned and set up the necessary environment to enable the relevant tests to commence.
2	Licensed Software	The Contractor has delivered the Licensed Software to the Customer accompanied by the Systems Test Summary Report.
3	REM installation	The Contractor has installed the Licensed Software in the relevant Customer Environment for SAT.
4	Testing Criteria	The Parties have developed the testing plans and criteria relevant for the testing phase.
5	Acceptance of Deliverables	The Customer has accepted the Deliverables relevant for the Build Phase (Release 1) and, to the extent that it is responsible, the Data Phase.
6	Configuration	The Licensed Software has been configured to the extent required by the Customer to enable the Parties to enter SAT.
7	Data Base	The Systems Integrator has populated the Database with sufficient data to enable testing to commence.

8 Data Phase

8.1 Overview

8.1.1 The following Data Management services are a subset of the Build Phase (Release 1) and were Delivered during the Initial Implementation (Release 1) Phase of the Detailed Design Contract:

a) Data Management as set out in section 8.3 below;

b) Data Profiling as set out in section 8.3.1 below; and

c) Data Configuration as set out in section 8.3.2 below.

8.1.2 The Services described below are predominately performed by the Systems Integrator, in conjunction with the Customer. However, the Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are supplied and are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

8.2 Entry Criteria

8.2.1 The Entry Criteria for the Data Phase are specified in the table below:

#	Criterion	Description
1	Data Profiling	a. The Customer has established the data profiling team consisting of Customer and Systems Integrator personnel to identify sources of data within the Customer Environment to enable IMS to achieve its Functional Requirements (**Data Profiling Team**); and b. To the extent practicable, the Customer's data repositories have been

#	Criterion	Description
		identified and access granted to the Data Profiling Team.
2	Configuration Requirements	a. The Customer has established a data configuration team consisting of Customer and Systems Integrator personnel to configure the Data compiled by the Data Profiling Team in order to ensure the data is in a format compatible with the Licensed Software; and b. The Customer has compiled the necessary data to enable the Contractor and Systems Integrator to commence the configuration.

8.3 Services

Data Management Services

#	Service	Description
1	Data Cleansing and Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to perform Data Cleansing as set out in Module 9. For the avoidance of doubt, the majority of the Data Cleansing work will be performed by the Systems Integrator and Customer and the Contractor will perform a supporting role.
2	Data Management Planning	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator to undertake preparatory and administrative work in respect of the Data Cleansing and Data Analysis. The Contactor's input for this Service will be minimal as the technical analysis, review of inputs, defining the scope the work, agreement on approach (including timing), initiation of stakeholder groups, creation of templates, and establishment of tools and access to systems will be the Systems Integrator and Customer's responsibility.

Data Profiling Services

8.3.1 The Services described below have been discharged during the Detailed Design Contract and are here for historical purposes.

#	Service	Description
1	Planning/ management	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to undertake the following planning and management of the Data Profiling services: a. planning the Data Profiling services including deployment, training and support; b. management of the configuration team who are responsible for converting the raw data into a format that can be used by IMS; and c. reporting to senior management.
2	Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to undertake the following Data Analysis activities of the Data Profiling services: a. liaison with the Customer's business, technical and ROC stakeholders; and b. development of data configuration requirements and design documentation for use in conjunction with the Licensed Software.
3	Architecture	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to undertake the following Architectural activities of the Data Profiling services: a. define the technical architecture; and b. define the data architecture.
4	Programming	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to define what Oracle PL/SQL programming is required for Data Profiling services.

#	Service	Description
5	Testing	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator and Customer to perform Unit Testing and System Testing of the programmed work related to the Data Profiling services.
6	Training	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to undertake training required by the Customer as a result of the Data Profiling services.
7	Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to support the Data Profiling services. This may require providing timely advice to the Systems Integrator's lead and technical analyst and programmers.

Data Configuration of REM Services

8.3.2 The Services described below have been discharged during the Detailed Design Contract and are here for historical purposes.

#	Service	Description
1	Initial Data Load and Configuration	The Contractor shall provide technical advice to enable the Systems Integrator to undertake the Initial Data Load and Configuration of the Data. The Systems Integrator's scope for the Service extends to importing Customer supplied data into a clean REM system environment: a. clarification of data structure specified in the XLS template; b. dry-run of the provided master data XLS template on the relevant development system; c. single import of the XLS template to a database on the Customer Environment (Clean Environment); and d. initial Configuration using loaded data. The Contractor's assistance will be limited to providing: (i) technical input as well as providing hands-on training as required to the nominated Systems Integrator resource; and (ii) support of one data load.
2	Configuration Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator with the loading of additional data and modifications and additions to the configured data.

8.4 Exit Criteria

8.4.1 Exit Criteria is as detailed in point 5, 6 and 7 of the Build Phase (Release 1) Exit Criteria set out in section 7.5 above.

9 Testing Phase (Release 1)

9.1 Overview

9.1.1 The purpose of the Testing Phase (Release 1) is to ensure the Licensed Software satisfies the Customer's Requirements, as well as interoperates with the TIBCO middleware and the Customer Environment.

9.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Testing Phase (Release 1) are supplied and completed;

b) testing performed by the Contractor in the Systems Test environments are documented as being fit for purpose when the Licensed Software is delivered to the Customer;

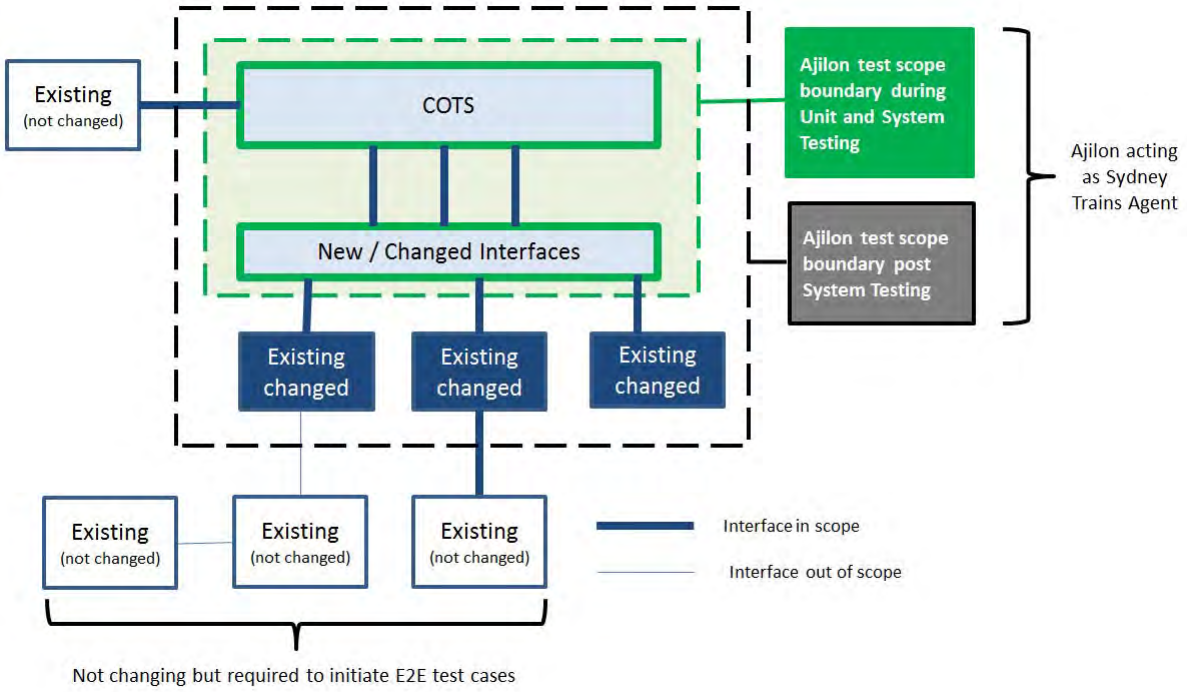
c) the Contractor demonstrates that the Licensed Software has been successfully tested in the Customer's relevant environment for SAT;

d) it provides appropriately skilled resources to assist the Systems Integrator and Customer during all other Tests contemplated in this Section 9; and

e) all Deliverables that it is obliged to supply under the Testing Phase (Release 1) are accepted by the Customer, on or before the relevant date(s) specified in the Project Plan.

9.2 Scope and Responsibilities

9.2.1 The following depicts the scope of the ROC Technology Testing and the responsibilities of each Party.



In the context of the above diagram, COTS refers to the Contractor and delivery of the Licensed Software as integrated into the TIBCO middleware (by the Systems Integrator) and the Customer Environment.

9.3 Entry Criteria

9.3.1 The Entry Criteria for the Testing Phase (Release 1) is specified in the table below. For the avoidance of doubt, the activities described below are repeatable at the commencement of each separate Test Phase.

#	Criterion	Description
1	Licensed Software is ready for SAT	a. The relevant test environment (as described in the TEMS as Schedule 2 of this Customer Contract (Agreement Documents)) has been set up and is available to commence testing;

		b. Verification by the Contractor that the Licensed Software has been installed in the Customer Environment (not applicable for REM Mobile 2016.R1); c. System testing of the Licensed Software has successfully met its exit criteria as demonstrated by the System Test Summary Report; d. Test Data has been imported in to the relevant test environment(s) by the Systems Integrator for either the preferred option or alternative option described below, as determined by the Customer: i. The preferred option is that: A. relevant Customer Master Data has been supplied and loaded into the test environment; and B. the Master Data has been configured by the Configuration Team in line with the Customer's business processes; ii. The alternative option is that: A. sample Master Data has been provided by the Contractor as agreed between the Parties; and B. sample business configuration has been provided by the Contractor; e. System Test Plan has been accepted by the Customer.

9.4 Services

9.4.1 The following Services will be performed by the Contractor either in a lead capacity, as a contributor to Services performed by the Systems Integrator, or in consultation with the Systems Integrator or Key Contractors.

#	Service	Description
1	SAT Test Phase, REM Licensed Software	The Contractor will perform SAT testing of the Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 9.5 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.
2	Test Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator provide technical assistance and advice, to support the Systems Integrator and Customer to deliver the following tests. This applies to all test phases including Cross Stream and Security testing. a. SIT Test Phase; b. UAT Test Phase (Program and Business); c. Load and Performance Test Phase; d. Operational Acceptance Testing, Test Phase; e. ERM Regression Testing (**Note:** Not applicable for Release 1); f. Security and Penetration Testing; and g. Cross Stream Testing. Test support by the Contractor is limited to Defect triage, Defect rectification, progression and regression testing of fixes affecting the Licensed Software.

#	Service	Description
3	SAT Test Phase, REM 2016.R2 Licensed Software	The Contractor will perform SAT testing of the REM 2016.R2 Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 9.5 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.

9.5 SAT Deliverables

9.5.1 The Contractor shall deliver the following Deliverables.

Deliverable	Description
SAT Test Objective Matrix (2016.R1)	A table demonstrating proposed test coverage. Test objectives state what is to be tested and are derived from the requirements and depend on the scope of the test phase.
SAT Test Cases (2016.R1)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.
SAT Test Summary Report (2016.R1)	The SAT Test Summary Report provides a summary and evaluation of the test phase based on objective data and a recommendation to move to the next stage of testing or to execute further tests in the current test phase based on results of the SAT Test. In general the SAT Test Summary Report contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; d. Recommendations to move to the next stage or to execute further tests based on results.
System Test Plan	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to prepare the System Test Plan. The System Test Plan is an outcome of the planning process. It ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the solution will support the Customer's business and stakeholder requirements

Deliverable	Description
SAT Test Objective Matrix (2016.R2)	A table demonstrating proposed test coverage. Test objectives state what is to be tested. Test objectives are derived from the requirements and depend on the scope of the test phase.
SAT Test Cases (2016.R2)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement.
SAT Test Summary Report (2016.R2)	The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.

9.6 Other Test Deliverables

9.6.1 The following are Deliverables to be developed by the Systems Integrator or Customer that may require assistance and input from the Contractor. The expectation is that the Contractor's input into these deliverables will be minimal.

9.6.2 One set of Deliverables will be created for each of the following Test Phases:

a) System Testing for TIBCO and other interfaces;

b) SIT Test;

c) Load and Performance Testing;

d) User Acceptance Testing;

e) Operational Acceptance Testing;

f) Security and Penetration Testing; and

g) Cross Stream Testing.

Deliverable	Description
Test Plan	The Test Plan ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the Licensed Software will support the Customer's business and stakeholder requirements.
Test Objective Matrix (TOM)	The TOM is a table demonstrating proposed test coverage. Test Objectives state what is to be tested and are derived from the business and functional requirements and depend on the scope of the test phase.
Test Cases	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the test cases is to state how the testing will be implemented during testing and are based on the TOM.

Deliverable	Description
Test Summary Report	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results In general the Test Summary Report must contain, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; and iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; Recommendations to move to the next stage or to execute further tests based on results.

9.7 Rollback option

9.8 The Contractor represents, that REM2016.R2 is a minor upgrade to REM2016.R1.

9.9 The Customer and the Contractor acknowledge and agree that there will only be a short period of time in which to test REM2016.R2. If any issues arise during the testing of REM2016.R2 that, in the opinion of the Customer, can be isolated and that do not otherwise affect the operation of the IMS, both the Customer and the Contractor will attempt to resolve those issues to the satisfaction of the Customer.

9.10 If, any issues arise during the testing of REM2016.R2 that cannot be resolved to the satisfaction of the Customer, the Customer may, in its absolute discretion, elect to proceed with REM2016.R1 instead of REM2016.R2 in which case the Contractor will remove REM2016.R2 and instead deploy REM2016.R1 in accordance with the Project Schedule.

9.11 If the decision is made to proceed with REM2016.R1 rather than REM2016.R2:

9.11.1 the Customer and the Contractor will work, in good faith, towards developing a Change Request to cover the additional work required to incorporate REM2016.R2 at a later point in time; and

9.11.2 the Customer will not consider the failure of REM2016.R2 to be a Defect in the event it decides to proceed with REM2016.R1 instead of REM2016.R2.

9.12 Defect Severity Definitions

9.12.1 The following Defect severity definitions shall apply for all Test Phases, excluding Systems Testing.

Severity 1

Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists.

Examples of Severity 1 Defects include:

a) safety issues;

b) REM or a core component of REM is inoperable.

The Customer will not take Severity 1 Defects into the next Test Phase or to the Production Environment.

Severity 2

High Impact – Assigned to major errors. Some key REM functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality, but the Defect must be resolved before the component can be migrated to the next Test Phase or to Production Environment.

Examples of severity 2 Defects include:

a) the REM or a component of REM is operable however one or more functions do not work according to the Functional Specifications or have not been delivered and no acceptable workarounds exist;

b) any issue with data accuracy or integrity which may cause confusion among the Customer end-user community.

the Customer would not usually consider taking Severity 2 Defects into the next test phase or to the Production Environment unless there were exceptional circumstances. The Customer would need to have understood and accepted the risk/impact via approval of the TSR. There is an expectation that any Severity 2 Defects would be resolved by the next release of the Licensed Software.

Severity 3

Medium Impact – Assigned to minor errors. Some functionality does not conform to the Functional Specifications or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact on the Customer's end users. Testing can continue and the component can be migrated to the next test phase or to the Production Environment providing exit criteria are met. Examples of severity 3 Defects include REM or an REM component is operable however one or more functions do not work according to their Functional Specifications or have not been delivered and acceptable workarounds exist.

The Customer may consider (at its sole discretion) taking a small number of Severity 3 Defects into the next test phase or the Production Environment provided the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the System. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

Severity 4

Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on the Customer end users orthe System. Examples of severity 4 Defects include:

a) misspelled (but not misleading) text;

b) inconsistent fonts; or

c) poor grammar.

The Customer may consider (at its sole discretion) taking a small number of Severity 4 Defects into the next test phase or the Production Environment providing the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the ROC program. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

9.13 SAT Exit Criteria:

Deliverable	Description
Test Cases	All test cases have been executed and the outcome recorded in the Contractor's Test Management Tool (**TMT**). An explanation has been provided by the Contractor to the Customer for any test case which has not been executed by the Contractor. The Parties acknowledge and agree the TMT used by the Contractor will be Jama, as compared to HP ALM used by the Systems Integrator and Customer.
Recording Defects	All Defects identified during the test phase have been recorded in the Defect Management Tool (DMT) and are available for review. The Parties acknowledge and agree the DMT used by the Contractor will be ITSM, as compared to HP ALM used by the Systems Integrator and Customer.
Severity 1 / Severity 2 Defects	No Severity 1 or Severity 2 Defects outstanding.
Severity 3 / Severity 4 Defects	An agreed action plan is in place to address outstanding Severity 3 and Severity 4 Defects, including target resolution time frame.
Defect Acceptance	The number of outstanding Severity 3 and Severity 4 Defects and the cumulative impact of these Defects on REM must be accepted by the Customer. Once all test exit criteria for the test phase have been met, the Contractor must produce a TSR to demonstrate the outcome of the testing phase. Where exit criteria have not been met, the test phase shall continue until exit criteria has been met.
Defect Deviation	Any deviation from the agreed exit criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management.

10 Deployment (Release 1) Phase

10.1 Overview

10.1.1 The Objectives for these Services are that:

a) the Licensed Software is deployed into the relevant test or Production Environment;

b) deployments into the Customer relevant environments are managed so that any disruption to the environments that can be avoided is avoided, or where avoidance is not possible, kept to a minimum;

c) deployments are managed in accordance with the Customer's Enterprise Release Framework and Change Management process.

This section encompasses the Services required to confirm the readiness of REM 2016.R1 and REM Mobile 2016.R1 for deployment into the relevant test or Production Environment.

10.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are accepted by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

10.2 Entry Criteria

10.2.1 The Entry Criteria for the Deployment (Release 1) Phase are specified in the table below:

#	Criterion	Description
1	Licensed Software	The Licensed Software has been received by the Customer from the Contractor.
2	Documentation	The Contractor has provided details of the software and hardware configurations required to enable the Licensed Software to be tested in the relevant environments (as described in the TEMS).
3	Environments	The Customer has set up the following environments in accordance with the Non Functional Specification and as described in the TEMS: a. REM Configuration; b. REM Demo; c. Development; d. System Test; e. SIT; f. UAT; g. Pre-PROD; h. PROD; i. Training; and j. Disaster Recovery*. * Out of scope for the Contractor's Services (the **Non Production Environment**).

10.3 Services

10.3.1 The Contractor will provide a Systems Administrator to provide the following Services for each Customer Non Production Environment (as defined in section 10.2.1). Unless otherwise agreed between the Parties, the Systems Administrator's role concludes on 10 December 2016 that is the scheduled Release 1 Technical Go Live Date.

10.3.2 The Systems Administrator will perform the Services described in the table below:

Service	Description
Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment. a. REM Incident Management software; and b. additional necessary software packages.
System Level Configuration	Configure REM application on system level - various configuration and start up files.
Database Set Up	Perform Application related database setups: a. including setup of database instances; b. setup of database users; c. setup of schemas; and d. setup of Oracle database recovery and backup procedures (optional, depending on system operation model).
Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. as preparation for the production environment; and c. for debugging and Defect reproducing reasons.
Schema Updates	Perform Database Schema Updates, as required.

Service	Description
Monitoring Tools	Installation and configuration of monitoring tools according to Customer standards.
Manage Users	Setup, manage and track users and associated access levels.
Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations.
Sanity Testing	Perform basic sanity testing of the integration and configuration
Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.
Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. creation of Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality); and vi. filing an error report in the Contractor's Defect Reporting Tool ITSM.
Production Support	The Contractor will provide support after REM Goes Live in the Production Environment on request from the Systems Integrator or the Customer. Unless otherwise agreed, post-production support will be priced on the T&M Rates in the PIPP.
Pre-Production and Production	
Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment. a. REM Incident Management software; and b. additional necessary software packages related to the REM product but not including third party applications.
System Level Configuration	Configure REM application on system level - various configuration and start up files. Note: Appropriate access to the systems has to be granted by the customer.
Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. for debugging and Defect reproducing reasons.
Manage Users	Setup, manage and track users and associated access levels.

Service	Description
Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations.
Sanity Testing	Perform basic sanity testing of the integration and configuration
Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.
Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. adding to the Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality).

10.4 Responsibilities

10.4.1 The Customer will:

a) establish and disseminate to the Contractor and Systems Integrator, an ERM framework to permit seamless deployment;

b) provide timely notification to the Customer's ERM team to schedule the REM deployment in accordance with the ERM framework; and

c) set up and maintain operational test environments that are functionally equivalent to the Production Environment where the Systems Integrator or Contractor needs such operational test environments to fix Defects and perform regression testing.

10.5 Deliverables

10.5.1 The Contractor shall provide, or contribute to the following Deliverables developed by the Systems Integrator.

#	Deliverable	Description

#	Deliverable	Description
1	Handover Plan	The Hand Over Plan is a Systems Integrator Deliverable outlining: a. Technical documents required to support REM that includes as built specifications documents etc; b. Training Session(s) to be provided by the Contractor or Systems Integrator (as required) to enable proficiency in the use of REM, as well as basic support, including: i. number of students; ii. duration of course; iii. outline of content; and iv. key dates. **Note**: The Handover Plan relates to REM only and excludes the Customer Environment.
2	Post Implementation Verification Report	The Contractor shall, in conjunction with the Systems Integrator, provide any required assistance to the Customer to develop the Post Implementation Verification Report which outlines: a. the issues that arose during the Deployment (Release 1) Phase that necessitate recording; b. lessons learned from the Deployment (Release 1) Phase that may be used to mitigate further problems or repeated to ensure seamless delivery of services; and c. follow-up actions including detailing any deferred scope.
3	Production and Pre-Production Installation Run-Sheets	REM Pre-Prod and Prod installation Run Sheets based on ROC Technology Implementation Plan template. The Pre-Prod Run sheet will be created in parallel with the first application installation of the Pre-Prod environment.

11 Training (Release 1)

11.1 Overview

11.1.1 The Contractor shall provide the following training to enable the Customer to use, operate, administer and maintain REM.

11.2 Services

11.2.1 The Contractor shall deliver the following Training Services to the Customer.

Item	Service	Description
1	Technical System “Train the Trainer” Training	Provision of Technical System “Train the Trainer” Training including the training materials. This training is intended for staff responsible for training the Customer staff required to operate the IMS. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functional and operational principle of an incident management system; b. explain the functionality of the IMS; c. explain the typical use cases and associated workflows; d. perform operative incident management using the IMS at an operator place independently; e. have an overview of the system actors, support structure and supplementary application documentation; and f. explain, teach and demonstrate the IMS operational content in the Customer’s learning environment. This Service includes: a. design of “Train the Trainer” training course to meet the aims outlined above; b. provision of all training materials; and c. provision of the “Train the Trainer” training course to the Customer Personnel (3 training courses, of 3 continuous days). The Customer will provide the training facilities required to conduct the courses.
2	System Administration training	Provision of System Administration Training including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of REM. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. The aim of the course is to provide attendees with training to enable the attendees to: a. identify components of the REM 2016.R1 and assign them to system structures; b. explain the functionality and purpose of the individual components of REM 2016.R1, including system interfaces; c. interpret operational and technical messages of the REM 2016.R1 and analyse causes; d. carry out maintenance working steps for administration of the REM 2016.R1 components according to the system administration manual; e. carry out software update procedures for the REM 2016.R1; f. name, readout and interpret relevant log files of the REM 2016.R1; g. assess the technical and operational effects of these actions; and h. provide second level support requirements.

Item	Service	Description
3	Application Administration Training	The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of REM. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functionality of REM b. explain the functionality of the REM DMC; c. explain the functional data structure of REM; d. maintain REM configuration data; e. configure the responsibility model; f. configure the track network; g. configure workflows; and h. carry out user, role and group administration. **Note:** Application Administration Training was delivered under the Detailed Design Contract.

11.3 Deliverables

11.3.1 The Contractor shall provide the following Deliverables for the training courses it will deliver to the Customer:

#	Deliverable	Description
1	Training Material Technical System Train the Trainer Training	REM Training consisting of trainer PowerPoint slide pack
2	Training Material System Administration	Contractor is responsible for creating the training material for System Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual (delivered under Detailed Design agreement).
3	Training Material Application Administration	Contractor is responsible for creating the training material for Application Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual (delivered under Detailed Design agreement).

12 Maintenance and Support – Release 1

12.1 Overview

12.1.1 Maintenance and Support Services (Recurring Services) for Release 1 commences when Release 1 Goes Live in the Production Environment.

12.1.2 The Parties entered into a separate contract for the Recurring Services on or about 9 December 2016.

Section C – Release 1-T2

13 Detailed Design (Release 1-T2) Phase

13.1 Overview and purpose of Detailed Design (Release 1-T2) Phase

13.1.1 The purpose of the Detailed Design (Release 1-T2) Phase is to document and confirm in the Detailed Design Documents all of the Requirements for Release 1-T2 (based on the Initial Requirements for Release 1-T2), which will include updating the Detailed Design Documents created during Detailed Design (Release 1) Phase).

13.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Detailed Design (Release 1-T2) Phase (as specified in Section 13.3) are supplied and completed; and

b) all Deliverables that it is obliged to supply under the Detailed Design (Release 1-T2) Phase (as specified in Section 13.4) are approved by the Customer (or its nominee),

on or before the relevant date(s) specified in the Project Schedule.

13.2 Entry Criteria

13.2.1 The Entry Criteria for the Detailed Design (Release 1-T2) Phase are specified in the table below:

#	Criterion	Description
1	The Systems Integrator has entered into an agreement with the Customer relating to the Detailed Design (Release 1-T2) Phase.	The Systems Integrator has entered into an agreement with the Customer for its work on the Detailed Design (Release 1-T2) Phase and is ready to work with the Contractor on the Contractor's Release 1-T2 Services and Deliverables set out in this PIPP.

13.3 Services

13.3.1 The Contractor must supply the following Services as part of the Detailed Design (Release 1-T2) Phase:

#	Description
1	Implement and perform all the Detailed Design (Release 1-T2) Phase kick off activities in accordance with, and using the Project kick off materials developed by the Systems Integrator as part of the Project Preparation Phase and approved by the Customer (or its nominee), including: a. liaising with the Customer to ensure that all of the requirements necessary to facilitate the meeting(s) are in place; b. ensuring all required Supplier Personnel are present at the meeting(s); c. chairing and presenting the System meeting(s) in accordance with the meeting objectives and agenda(s); d. developing agenda for socialisation with participants; and e. producing official minutes of meetings, including obtaining participant approval of contents.

#	Description
2	Participate in all necessary workshops with the Customer, the Systems Integrator and all relevant Customer stakeholders: a. to clarify the Initial Release 1-T2 Requirements and validate those Initial Release 1-T2 Requirements; b. to identify any changes to those Initial Release 1-T2 Requirements; and c. to prepare the documents required as part of the Detailed Design (Release 1-T2) Phase.
3	Review and analyse existing business processes, technology interfaces and requirements for the purpose of preparing the documents required as part of the Detailed Design (Release 1-T2) Phase.
4	Update the Detailed Design Documents for the System as required for Release 1-T2.
5	Conduct playback sessions with the Customer and all relevant Customer stakeholders to: a. summarise the key decisions made and Updated Release 1-T2 Requirements during the Detailed Design (Release 1-T2) Phase and how the Systems Integrator configuration approach will result in the successful delivery of the Customer's Requirements; b. confirm that the Detailed Design will meet the Customer's Requirements; and c. confirm that the scope of Release 1-T2 to be implemented is understood by all Parties.
6	Participate in a risk management workshop with the Customer, the Systems Integrator and all relevant Customer stakeholders to identify and agree on risks to Release 1-T2.
7	Provide the Key Contractors with all the necessary assistance reasonably requested by the Key Contractors during the Detailed Design (Release 1-T2) Phase.
8	Do all things necessary (using a standard of a prudent contractor of services and deliverables similar to the Services and Deliverables to be supplied as part of the System) to enable the Key Contractors to carry out their services and deliverables so that the Contractor can develop and supply the Deliverables described in section 13.4 of this PIPP and Services described in this section 13.3 of this PIPP.
9	Do all other things necessary to develop and supply the Deliverables described in section 13.4 of this PIPP and Services described in this section 13.3 of this PIPP and as otherwise directed by the Customer.

13.3.2 The Contractor must supply the Services which are part of the Detailed Design (Release 1-T2) Phase in accordance with, and on or before the relevant date(s) specified in, the Project Schedule.

13.4 Detailed Design Deliverables

13.4.1 The Systems Integrator is responsible for the following Deliverables with appropriate input from the Contractor (refer to Appendix F for allocation of accountabilities and responsibilities):

a) The Transformation and Change Deliverables specified in the table below are to be provided to the Customer during the Detailed Design (Release 1-T2) Phase and must accord substantially with the guidance provided in the CSI document titled '*Transformation and Change Requirements v4.1*' provided to the Systems Integrator during the High Level Solution Design Phase.

b) Where the Contractor must contribute to a Deliverable specified in the table below, the Contractor must work with, contribute to and provide all reasonable assistance requested by the Systems Integrator to complete the relevant Deliverable.

c) The Systems Integrator must, in collaboration with the Key Contractors, supply the following Deliverables as part of the Detailed Design (Release 1-T2) Phase. The approval of each Deliverable will be the responsibility of the Customer (or the Customer's nominee).

d) The Deliverables set out in the table below will be completed and delivered by the Contractor in two phases as follows and in accordance with the dates set out in the Project Schedule:

i) to allow product customisation to commence as part of the Build Phase (Release 1 – T2) the Software Build Documents will be prioritised and completed by the Contractor prior to the remaining Release 1-T2 Detailed Design Deliverables; and

ii) all other Release 1-T2 Detailed Design Deliverables will be completed by the Contractor after Software Build Documents are in final form.

#	Deliverable	Description	Approval
Technology Deliverables			
1	Release 1-T2 Functional Specification	The Release 1-T2 Functional Specification defines the System's required capabilities, appearance and interaction with users. The functional specification will be used to validate that the IMS meets the DTBRS that shall be developed by the Customer during the Detailed Design (Release 1-T2) Phase. Functional specifications relate to the following: a. Function involving user interaction and its user interface; b. Function which is unattended processing such as batch processing; and c. Mapping between business requirements/capabilities and functional requirements for the different products.	The Customer (or its nominee)
2	Release 1-T2 Architecture Specification	The Release 1-T2 Architecture Specification combines what were formally two separate Deliverables for Release 1, being: (i) the Architecture Specification and (ii) the Non-functional Design. The Release 1-T2 Architecture Specification must describe the Release 1-T2 solution, including systems, platforms and technology required to deliver the functional and non-functional requirements. The document will (where required) expand on the High-Level Design and Release 1 and should contain the following: Introduction: a. document overview; a. document inputs; and b. phase scope. Systems architecture: c. high level conceptual overview; d. level 2 business processes; e. application usage view; f. system integration view; g. application structure view; h. information architecture (including reference data requirements); i. infrastructure usage view;	The Customer (or its nominee)

#	Deliverable	Description	Approval
		j. implementation and deployment view; and k. manual integration. Rationale and justification for detailed design architectural approach: l. rationale; m. architecture risks; n. architecture issues; o. architecture constraints; p. architecture assumptions; q. architecture decisions; and architecture dependencies. The Release 1 Non-Functional Design developed during the Detailed Design (Release 1) Phase must be incorporated into the Release 1-T2 Architecture Specification and updated to reflect the findings by the Contractor during the Detailed Design (Release 1-T2) Phase. The Release 1-T2 Non-Functional Design specifies the non-functional requirements including, at a minimum: a. auditability; b. availability; c. interoperability; d. maintainability; e. manageability; f. performance; g. portability; h. reliability; i. reporting; j. scalability; k. security; and l. usability.	
3	Release 1-T2 Integration Specification	The Release 1-T2 Integration Specification describes the high level integration points between the IMS and other systems in the Customer Environment. A detailed interface specification for each Interface will be created by the Systems Integrator during the Build Phase for Release 1-T2. The following subjects are included in the Release 1-T2 Integration Specification, one entry for each integration service: a. high level data flows between applications to support the business processes; b. data objects required by consumer – request; c. data objects available from consumer – response; and d. data object transformations required. The Release 1-T2 Integration Specification will not be used to describe the Acceptance Criteria for interfaces and integration points with legacy and new	The Customer (or its nominee)

#	Deliverable	Description	Approval
		applications. The detailed interface specification for each Interface to be created by the Systems Integrator during the Build Phase for Release 1-T2 will describe the relevant Acceptance Criteria for each Interface.	
4	Project Communication Plan for Release 1-T2	Contribute to the development of the Project Communications Plan for Release 1-T2 being developed by the Systems Integrator. The Project Communications Plan for Release 1-T2 clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development. The Project Communications Plan for Release 1-T2 outlines: a. what needs to be communicated and to whom; b. how often these exchanges should happen; and c. in what format and why they are necessary.	The Customer (or its nominee)
5	Updated Technology Implementation Strategy (Release 1-T2)	Contribute to the development of the Updated Technology Implementation Strategy being developed by the Systems Integrator. The Updated Technology Implementation Strategy shall be baselined against the Technology Implementation Strategy developed in Release 1 and as varied to reflect the Release 1-T2 program agreed between the Parties. The Updated Technology Implementation Strategy must be in the format approved by the Customer during the Project Preparation Phase specifying the implementation approach and method that will be implemented for the System, including, at a minimum: a. personnel and organisation; b. implementation approach, including: i. releases; ii. system Verification and Validation; iii. system change management; iv. release and deployment management; and v. change implementation; c. summary of impacted system components; d. preliminary requirements for Go Live; e. implementation plan (start criteria, phases, timelines, critical path milestones; f. Verification instructions; g. roll back plan; h. post implementation support; i. post migration activities; and j. steps required to initiate/install a new system/process/function or decommission an old system/process/function.	The Customer (or its nominee)
6	Technology Test Strategy (Release 1-T2)	Contribute to the development of the Updated Technology Test Strategy being developed by the Systems Integrator. The Technology Test Strategy refers to the program test framework and must include the following:	The Customer (or its nominee)

#	Deliverable	Description	Approval
		a. Introduction – Describing the purpose and objectives of the testing; b. Scope – What will be tested and what will not be tested; product risk analysis and traceability; assumptions; test risks and constraints; c. Approach – How will the testing be carried out: Approach, test phases; test deliverables (plans, specifications, reports); releases; d. Environment(s) - Test Environment strategy including where each testing phase will take place, environment management, release management; e. Test Management and Measurement – Describes how the testing will be managed and measured: what metrics to collect; Release Acceptance; acceptance criteria; Defect management, test reporting, completion criteria; f. Roles and Responsibilities – Who will do the work? What work will they do? (This may include a number of organisations); g. Schedule – list of tasks and effort assigned to staff (when will the work be done and what is the effort required); h. Document revision and history; and i. Approvals.	
7	Updated Project Management Plan (Release 1-T2)	Contribute to the development of the Updated Project Management Plan being developed by the Systems Integrator. The Project Management Plan submitted by the Contractor during Release 1 shall be used as the base document and will be updated to reflect the findings by the Contractor during the Detailed Design (Release 1-T2) Phase. The Updated Project Management Plan must specify, as a minimum, the following: a. current project status; b. project overview; c. scope and deliverables; d. solution approach, including: i. architecture and phase approach; ii. organisation change management; and iii. delivery approach; e. budget and schedule; f. dependencies; g. roles and responsibilities; h. project control; i. quality management; j. work breakdown structure (WBS) for Deliverables identified in section 19.4 of this PIPP; and k. key risks and issues.	The Customer (or its nominee)
8	RACI (Release 1-T2)	Contribute to the RACI Deliverable being developed by the Systems Integrator. The RACI must detail the deliverables and respective obligations of the Systems	The Customer (or its nominee)

#	Deliverable	Description	Approval
		Integrator, the Contractor, Key Contractors and the Customer.	
9	Updated Release 1-T2 Product Gap Analysis	The Updated Release 1-T2 Product Gap Analysis shall be based on the DTBRS to reflect the findings by the Contractor/Key Contractors (as applicable) during the Detailed Design (Release 1-T2) Phase. The Updated Release 1-T2 Product Gap Analysis Deliverable specifies the gaps between Release 1-T2 detailed requirements and the detailed solution design and is designed to: a. track the functional gaps for the application; b. show traceability to the resolving application enhancements; c. show traceability to the resolving business workarounds; and d. if required identify any gaps that will not be resolved, and present a forecast of the impact to the business.	The Customer (or its nominee)
10	Release 1-T2 Master Test Plan	Contribute to the Release 1-T2 Master Test Plan being developed by the Systems Integrator. The Release 1-T2 Master Test Plan describes how the testing will be delivered for the Release 1-T2 System Test phase and must include: a. test plan identifier; b. references; c. introduction; d. test objectives; e. test items; f. software risk issues; g. features to be tested and traceability; h. features not to be tested and reasons; i. approach including the use of stubs, simulators etc; j. item pass/fail criteria (if different from strategy); k. suspension criteria and resumption requirements (if different from strategy); l. test deliverables; m. environmental needs; n. staffing and training needs (if different from strategy); o. responsibilities; p. schedule of tasks and assigned staff; q. planning risks and contingencies; r. approvals; and s. glossary.	The Customer (or its nominee)
11	Requirements Traceability Matrix updated for Release 1-T2	Contribute to the Requirements Traceability Matrix Deliverable for Release 1-T2 being developed by the Systems Integrator. The Requirements Traceability Matrix shows the status and decisions made regarding the business requirements/capabilities. The Requirements Traceability Matrix updated for	The Customer (or its nominee)

#	Deliverable	Description	Approval
		Release 1-T2 must include the following: a. an outline of the business requirements/ capabilities; and b. an outline of the relationship between the business requirements/capabilities, functional requirements and test cases. Extracts of this information will be used as input into the creation of other Deliverables such as the Functional Specifications, Product Gap Analysis, Integration Specifications, etc.	
12	Technology Environment Management Strategy	Contribute to the update of the Technology Environment Management Strategy Deliverable being developed by the Systems Integrator. The Technology Environment Management Strategy details the process for managing end to end environments. This document contains processes for: a. booking and reserving test systems; b. tracking environment changes; c. managing environment contention; d. code/defect management (code promotion processes); e. environment scheduling; f. configuration tracking; g. data management (extracts, transforms loads); and h. managing interdependent projects.	The Customer (or its nominee)
Transformation and Change Deliverables			
13	Change Impact Analysis (Release 1-T2)	Contribute to the development of the Change Impact Analysis being developed by the Systems Integrator. The Change Impact Analysis will describe the change impact on Release 1-T2 related activities in the following dimensions: a. Business process/workflow; the way and extent that change impacts the way work/business activities are conducted that enable the business to produce a value-added business outcome. b. Policies and procedures; the way and extent that change impacts the formal and informal guidelines for daily work activities. c. Communication; the way and extent that change impacts the information flow required within the organisation. d. Performance measures; the way and extent that change impacts the methods and tools required to measure performance and sustain change. e. Technology; the way and extent that change impacts the physical work environment including technology and information systems, overall layout, location and human factors. f. Organisational Structure; the way and extent that change impacts the structure of business units	The Customer (or its nominee)

#	Deliverable	Description	Approval
		within the ROC. g. Roles and Responsibilities; the way and extent that change impacts the outputs and inputs and work responsibilities and/or accountabilities assigned to positions within the ROC scope. h. Skills and Knowledge; the way and extent that change impacts the knowledge, skills and abilities required of all positions within the ROC scope to effectively perform their jobs. i. Culture; the set of shared values, attitudes, goals and practices required to support the technology within the ROC. j. Behaviour; the way and extent that change impacts the behaviour required to be demonstrated to optimise the benefits introduced by new technology and processes within the ROC.	
14	Release 1-T2 Training Needs Analysis	Contribute to the development of the Release 1-T2 Training Needs Analysis being developed by the Systems Integrator. The Release 1-T2 Training Needs Analysis must detail the training requirements (role based) for the effective delivery and ongoing operation of the Release 1-T2 solution. The Release 1-T2 Training Needs Analysis must align to the Training Strategy provided by the Customer. Note that the associated training material will be developed during later phases of Release 1-T2, as set out in section 18.	The Customer (or its nominee)

13.5 Exit Criteria

13.5.1 The Exit Criteria for Detailed Design (Release 1-T2) Phase are:

#	Criterion	Description
1	Completion of all Detailed Design Deliverables	The Customer has accepted the Detailed Design Deliverables set out in section 13.4 of this PIPP.

14 Build Phase (Release 1-T2)

14.1 Overview

14.1.1 The purpose of the Build Phase (Release 1-T2) is to:

a) configure and customise the Licensed Software to fulfil the requirements specified in the Updated Requirements specified in Appendix A;

b) provide alpha and beta versions of the Licensed Software to the Customer to enable early visibility of the functionality of the Licensed Software; and

c) in collaboration with the Systems Integrator, customise the Licensed Software to interface with the TIBCO middleware and other Customer systems as detailed in the SAD.

14.1.2 The Contractor must ensure that:

a) all of the Services and Deliverables that it is obliged to supply under the Build Phase (Release 1-T2) are supplied and completed;

b) it will work collaboratively with the Systems Integrator to deliver the Services and Deliverables; and

c) all Deliverables that it is obliged to supply under the Build Phase (Release 1-T2) are Approved by the Customer, on or before the relevant date(s) specified in the Project Schedule.

14.2 Entry Criteria

14.2.1 The Entry Criteria for the Build Phase (Release 1-T2) are specified in the table below:

#	Criterion	Description
1	Software Build Documents are in final form	The Software Build Documents are in final form and have been approved, or are awaiting approval, by the Customer. Where one or more of the Software Build Documents have not been approved by the Customer, actions are in place, as agreed with the Customer, to ensure that outstanding Deliverables will be completed in line with an agreed timeline as determined by the Customer.
2	Detailed Design (Release 1-T2) Phase completed to necessary level to finalise the Software Build Documents and start the Build Phase (Release 1-T2)	All Services that the Contractor is required to supply during the Detailed Design (Release 1-T2) Phase to deliver the Software Build Documents have been supplied. The Customer has performed all Customer responsibilities and supplied all CSIs required to be performed or supplied during the Detailed Design (Release 1-T2) Phase to enable the finalisation of the Software Build Documents and commencement of the Build Phase (Release 1-T2).

14.3 Services

14.3.1 Subject to section 14.2, the Contractor must supply the following Services for the Build Phase (Release 1-T2):

#	Description
1	**Licensed Software (REM 2017.R2)** The Contractor shall Customise the Contractor's standard Licensed Software as detailed in the Software Build Documents in Annexure A to: (a) develop REM 2017.R2; and (b) address the Release 1-T2 Mobility requirements documented in the Software Build Documents
2	**System Testing** The Contractor will perform testing of the REM products at their development site and in accordance with the Contractor's existing in house processes. The Contractor shall provide the TSR to demonstrate, to the Customer's satisfaction, that the Licensed Software has been subjected to an appropriate level of testing to ensure it is fit for purpose.
3	**TIBCO Interfaces** As required, the Contractor shall support the Systems Integrator, including provision of technical advice and assistance to enable the Systems Integrator to develop the interfaces for TIBCO.

#	Description
4	**REM Installation** The Contractor shall install the Licensed Software in the relevant Customer non-production environment to enable the Parties to enter SAT.
5	**Data Configuration – System** The Contractor shall support the Systems Integrator as required to undertake configuration of the data as required by the Customer to enable the Testing Phase to commence.

14.4 Build Deliverables

14.4.1 The Contractor must, in collaboration with the Systems Integrator, supply the following Deliverables as part of the Build Phase.

14.4.2 Those Deliverables that were previously provided by the Contractor for Release 1 shall be updated, if required, during the Build Phase to reflect alternative approaches to the build, or delivery of the Services, or technological issues not contemplated during the High Level Solution Design Phase and/or Detailed Design (Release 1) Phase and/or the Detailed Design (Release 1-T2) Phase.

14.4.3 The Contractor must supply, or provide input into the following Deliverables as set out in the RACI. The Contractor shall provide all reasonable input and feedback to the Systems Integrator to ensure the Deliverables are fit for purpose.

#	Deliverable	Description
1	Architecture Specification	The updated Architecture Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
2	Functional Specification	The updated Release 1-T2 Functional Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
3	Integration Specification	The updated Integration Specification will reflect the design of the "as built" System developed during the Build Phase (Release 1-T2).
4	Test Strategy	The updated Test Strategy will reflect the approach agreed between the Customer, Contractor and Systems Integrator to implement IMS for Release 1-T2.
5	Master Test Plan	The updated Master Test Plan will reflect the approach agreed between the Customer, Contractor and Systems Integrator to test REM for Release 1-T2.
6	Project Management Plan	The updated Project Management Plan will reflect lessons learnt during Release 1-T2, as well as revision in the approach to project management agreed between the Parties during the Build Phase (Release 1-T2).
7	RACI	The updated RACI shall reflect additional Services and Deliverables identified for Release 1-T2.
8	Technology Environment Management Strategy	The updated Technology Environment Management Strategy will reflect the lessons learnt during Release 1 and Release 1-T2, as well as revision in the approach to environment management agreed between the Parties during the Build Phase (Release 1-T2).

#	Deliverable	Description
9	Technology Communications Plan	The updated Technology Communications Plan will reflect lessons learnt during Release 1-T2, as well as revision in the approach to project communications agreed between the Parties during the Build Phase (Release 1-T2).
10	Product Gap Analysis	The updated Product Gap Analysis will reflect the design of the “as built” System developed during the Build Phase (Release 1-T2).
11	Interface specification	The updated Interface Specification will reflect the design of the “as built” System developed during the Build Phase (Release 1-T2).
12	Requirements Traceability Matrix	The updated Requirements Traceability Matrix will reflect the design of the “as built” System developed during the Build Phase (Release 1-T2).
13	Technology Implementation Plan	The Contractor will contribute to the development of the Technology Implementation Plan being developed by the Systems Integrator. The Contractor shall base its response on the Technology Implementation Template agreed between the Parties during Detailed Design. The Technology Implementation Plan will detail and schedule the activities to deploy REM 2017.R2 into the Customer Environment. It must additionally address training, development of, and installation of the IMS into the Customer Environment, as well as handover to the Customer from the Contractor, Go Live and roll back (from the technology perspective).
14	Interface Documentation for SIRI (REM 2017.R2)	If required as a result of the changes that occur for REM 2017.R2, the Contractor will update the REM SIRI SX Interface Documentation that includes: a. detailed mapping documentation of REM Data Model to SIRI SX Data Model; b. XML Schema Definition (XSD) for REM Incident SIRI extension; c. architecture overview / data flow diagram; d. description of configuration options for SIRI SX REM Server module; e. description of configuration options for REM DMC; and f. SIRI SX message samples. The Contractor will collaborate with the Systems Integrator to ensure the Systems Integrator interface documentation aligns with the interface documentation developed by the Contractor.
15	Interface Documentation for Notification Functionality (REM 2017.R2)	The Contractor will update the Interface Documentation for Notification Functionality that shall include: a. restful interface specification comprising: i. URL scheme and parameter specification; ii. specification of authentication mechanism; and iii. interface versioning specification; b. XML Schema Definition (XSD) for service request/response messages; c. HTTP code specification for request/response messages; and d. request/response messages samples.

#	Deliverable	Description
16	Documentation of the REM Data Model (REM 2017.R2)	The Contractor will update the Documentation of the REM Data Model that shall include: a. ERD; b. Detailed entity documentation (column names, data types); c. Common attributes for: i. all data types (e.g. deactivated by, deactivated_ts, optlocking); ii. versionised REM Master Data (e.g. version_id, valid_from, valid_to); iii. imported REM Master Data (e.g. valid_from, valid_from, valid_to); and iv. data versioning principles
17	User Manual for Emergency Management Client (EMC) (REM 2017.R2)	The Contractor shall update the User Manual for Emergency Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the EMC. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.
18	User Manual for Data Management Client (DMC) (REM 2017.R2)	The Contractor shall update the User Manual for Data Management Client that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the DMC. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.
19	User Manual for Web Portal (REM 2017.R2)	The Contractor shall update the User Manual for Web Portal that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the Web Portal. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.
20	User Manual for REM Mobile (REM Mobile 2017.R2)	The Contractor shall update the User Manual for REM Mobile 2017.2 that includes a general description of the functions and capabilities of the application and contains all the basic information for the users to familiarise themselves with the mobile application. This document is provided in the Contractor's standard format in both Microsoft Word and PDF format.
21	IMS (REM 2017.R2) Licensed Software	Installation files, database update scripts and documentation for the deployment of REM 2017.R2.
22	System Test Summary Report (2017.R2)	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results in general composition contains, but is not limited to: a. executive summary; and b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; and iv. Defect summary.

14.5 Exit Criteria

#	Criterion	Description
1	Environment	For each environment type (as described in the TEMS and Environment Specification), the Customer has provisioned and set up the necessary environment to enable the relevant tests to commence.
2	Licensed Software	The Contractor has delivered the Licensed Software to the Customer accompanied by the Systems Test Summary Report.
3	REM installation	The Contractor has installed the Licensed Software in the relevant non production environments for SAT.
4	Testing Criteria	The Parties have developed the testing plans and criteria relevant for the testing phase.
5	Acceptance of Deliverables	The Customer has accepted the Deliverables relevant for the Build Phase and, to the extent that it is responsible, the Data Phase.
6	Configuration	The Licensed Software has been configured to the extent required by the Customer to enable the Parties to enter SAT.
7	Database	The Systems Integrator has populated the Database with sufficient data to enable testing to commence.

15 Data Phase (Release 1-Tranche 2)

15.1 Overview

15.1.1 The following Data Management services are a subset of the Build Phase (Release 1-T2):

a) Data Management as set out in section 15.3.1; and

b) Data Configuration as set out in section 15.3.3.

15.1.2 The Services described below are predominately performed by the Systems Integrator, in conjunction with the Customer. However, the Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are supplied and are approved by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

15.2 Entry Criteria

15.2.1 The Entry Criteria for the Data Phase (Release 1-T2) are specified in the table below:

#	Criterion	Description
1	Data Profiling	a. The Customer has established the data profiling team consisting of Customer and Systems Integrator personnel to identify sources of data within the Customer Environment to enable IMS to achieve its Functional Requirements (**Data Profiling Team**); and b. To the extent practicable, the Customer's data repositories have been identified and access granted to the Data Profiling Team.
2	Configuration Requirements	a. The Customer has compiled the necessary data to enable the Contractor and Systems Integrator to commence the configuration.

15.3 Services

15.3.1 Data Management Services

#	Service	Description
1	Data Cleansing and Data Analysis	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator and Customer to perform Data Cleansing as set out in Module 9. For the avoidance of doubt, the majority of the Data Cleansing work will be performed by the Systems Integrator and Customer and the Contractor will perform a supporting role.

15.3.2 Data Configuration of REM Services

#	Service	Description
1	Initial Data Load and Configuration	The Contractor shall provide technical advice to enable the Systems Integrator to undertake the Initial Data Load and Configuration of the Data. The Systems Integrator's scope for the Service extends to importing Customer supplied data into a clean REM system environment: a. clarification of data structure specified in the XLS template; b. dry-run of the provided master data XLS template on the relevant development system; c. single import of the XLS template to a database on the Customer Environment (Clean Environment); and d. initial Configuration using loaded data. The Contractor's assistance will be limited to providing: (i) technical input as well as providing hands-on training as required to the nominated Systems Integrator resource; and (ii) support of one data load.
2	Configuration Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator or the Customer, assist the Systems Integrator with the loading of additional data and modifications and additions to the configured data.

15.4 Exit Criteria

15.4.1 Exit Criteria is as detailed in point 5, 6 and 7 of the Build Phase (Release 1-T2) Exit Criteria set out in section 14.5 above.

16 Testing Phase (Release 1-T2)

16.1 Overview

16.1.1 The purpose of the Testing Phase (Release 1-T2) is to ensure the Licensed Software satisfies the Customer's Requirements, as well as interoperates with the TIBCO middleware and the Customer Environment.

16.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply under the Testing Phase (Release 1-T2) are supplied and completed;

b) testing performed by the Contractor in the Systems Test environments are documented as being fit for purpose when the Licensed Software is delivered to the Customer;

c) the Contractor demonstrates that the Licensed Software has been successfully tested in the Customer's relevant environment for SAT;

d) it provides appropriately skilled resources to assist the Systems Integrator and Customer during all other Tests contemplated in this Section 16; and

e) all Deliverables that it is obliged to supply under the Testing Phase (Release 1-T2) are accepted by the Customer, on or before the relevant date(s) specified in the Project Plan.

16.1.3 As at Change Request 6 the target operating system (as set out in the Requirements) was expanded to include Windows 7 in addition to Windows 10. For the avoidance of doubt:

a) each of the relevant deliverables will be a separate document deliverable for each target SOE except where agreed with the Customer; and

b) the Contractor will establish and maintain an additional environment for Windows 7 for the duration of System Testing Services.

16.2 Entry Criteria

16.2.1 The Entry Criteria for the Testing Phase (Release 1-T2) is specified in the table below.

#	Criterion	Description
1	Licensed Software is ready for SAT	a. The relevant test environment (as described in the TEMS as set out in Schedule 2 of this Customer Contract (Agreement Documents)) has been set up and is available to commence testing; b. Verification by the Contractor that the Licensed Software has been installed in the Customer's non-production environment; c. System testing of the Licensed Software has successfully met its exit criteria as demonstrated by the System Test Summary Report; d. Test Data has been imported in to the relevant test environment(s) by the Systems Integrator for either the preferred option or alternative option described below, as determined by the Customer: i. The preferred option is that: A. relevant Customer Master Data has been supplied and loaded into the test environment; and B. the Master Data has been configured by the Configuration Team in line with the Customer's business processes; ii. The alternative option is that: A. sample Master Data has been provided by the Contractor as agreed between the Parties; and B. sample business configuration has been provided by the Contractor; e. SAT Test Plan has been accepted by the Customer.

16.3 Services

16.3.1 The following Services will be performed by the Contractor either in a lead capacity, as a contributor to Services performed by the Systems Integrator, or in consultation with the Systems Integrator, Key Contractors or any Interfacing Contractor.

#	Service	Description
1	SAT Test Phase, REM Licensed Software	The Contractor will perform SAT testing of the Licensed Software in accordance with the System Test Plan that includes SAT Testing. The Contractor shall provide the following Deliverables as described in section 16.4 below: a. Test Objective Matrix; b. Test Cases; c. Daily Test Reports; and d. Test Summary Report, to demonstrate, to the Customer's satisfaction, that the Licensed Software meets the Customer's requirements as detailed in the SAT Test Cases. The Systems Integrator will, in collaboration with the Contractor provide oversight of the execution of SAT by the Contractor.
2	CR6 CAPS Service Extension (iPhone Certificate for REM Mobile Application)	Signature process services including: a. providing a REM Mobile 2016.2 and 2017.R2 certificate as applicable for the use on a maximum of twenty Sydney Trains owned test-devices; and b. management of iPhone UDID's. Service provided for up to eleven months from the effective date of Change Request 6 unless otherwise extended in writing between the Parties. Physical configuration and deployment configuration of CAPS and PLIST Files for MDAM is done by a REM System Administrator. As at CR6 this resource is provided by the Contractor as part of the maintenance and support contract. For the avoidance of doubt, if a REM System Administrator is no longer provided by the Contractor the responsibility for physical configuration will fall to the Customer.
3	CR6 REM Mobile Development – set-up (Configuration of CAPS and usage of Hockey)	Configuration process services including: a. Creation of new QR codes referring to new parameter sets for different test scenarios and/or non-production environments; b. Set-up and managing the deployment tool (Hockey) for the non-production environment; and c. Configuration of REM Mobile 2016.R2 and 2017.2 (as applicable) using CAPS for Sydney Trains non-production environments. , Service provided for up to eleven months from the effective date of Change Request 6 unless otherwise extended in writing between the Parties. Number of devices is restricted to 20 individual iPhones per month. Physical configuration and deployment configuration of CAPS and PLIST Files for MDAM is done by a REM System Administrator. As at CR6 this resource is provided by the Contractor as part of the maintenance and support contract. For the avoidance of doubt, if a REM System Administrator is no longer provided by the Contractor the responsibility for physical configuration will fall to the Customer.

#	Service	Description
4	Test Support	The Contractor may be required to and must at the reasonable request of the Systems Integrator provide technical assistance and advice, to support the Systems Integrator and Customer to deliver the following tests. This applies to all test phases including Cross Stream and Security testing: a. SIT Test Phase; b. UAT Test Phase (Program and Business); c. Load and Performance Test Phase; d. Operational Acceptance Testing Test Phase; e. ERM Regression Testing; f. Security and Penetration Testing; and g. Cross Stream Testing. Test support by the Contractor is limited to Defect triage, Defect rectification, progression and regression testing of fixes affecting the Licensed Software.
5	Update Documents for Target SOE	The Contractor will provide documentation updates with regards to the Additional Operating System Windows 7 for the following : a. Non-Functional Specification b. Product Gap Analysis c. Requirements Traceability Matrix For the avoidance of doubt, where practical and so as not to create ambiguity, these documents will be updated with a high level reference statement clarifying what the target SOE is from the date of CR6.

16.4 SAT Deliverables

16.4.1 The Contractor shall deliver the following Deliverables.

#	Deliverable	Description
1	SAT Test Objective Matrix (2017.R2)	A table demonstrating proposed test coverage. Test objectives state what is to be tested and are derived from the requirements and depend on the scope of the test phase.
2	SAT Test Cases (2017.R2)	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the SAT Test Cases is to state how the testing will be implemented during testing and are based on the Test Objectives Matrix.

#	Deliverable	Description
3	SAT Test Summary Report (2017.R2)	The SAT Test Summary Report provides a summary and evaluation of the test phase based on objective data and a recommendation to move to the next stage of testing or to execute further tests in the current test phase based on results of the SAT Test. In general the SAT Test Summary Report contains, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; and iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; d. Recommendations to move to the next stage or to execute further tests based on results.
4	System Test Plan	The Contractor may be required to and must at the reasonable request of the Systems Integrator assist the Systems Integrator to prepare the System Test Plan. The System Test Plan is an outcome of the planning process. It ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the solution will support the Customer's business and stakeholder requirements.
5	Software Delivery Notes for Target SOE's	Contractor will provide Software Delivery Notes for Target SOE's
6	Updated Documents for Target SOE	The Contractor will provide updated documentation with regard to the additional target operating system (Windows 7) for the following: a. Non-Functional Specification b. Product Gap Analysis c. Requirements Traceability Matrix For the avoidance of doubt, where practical and so as not to create ambiguity, these documents will be updated with a high level reference statement clarifying what the target SOE is from the date of CR6.

16.5 Other Test Deliverables

16.5.1 The following are Deliverables to be developed by the Systems Integrator or Customer that may require assistance and input from the Contractor. The expectation is that the Contractor's input into these deliverables will be minimal.

16.5.2 One set of Deliverables will be created for each of the following Test Phases:

a) System Testing for TIBCO and other interfaces;

b) SIT Test;

c) Load and Performance Testing;

d) User Acceptance Testing;

e) Operational Acceptance Testing;

f) Security and Penetration Testing; and

g) Cross Stream Testing.

#	Deliverable	Description
1	Test Plan	The Test Plan ensures necessary scope, resourcing, approach, schedule and environment items are correctly identified and communicated in the required detail for a Test Phase. It is a plan of how the test activities are going to provide objective evidence that the Licensed Software will support the Customer's business and stakeholder requirements.
2	Test Objective Matrix (TOM)	The TOM is a table demonstrating proposed test coverage. Test Objectives state what is to be tested and are derived from the business and functional requirements and depend on the scope of the test phase.
3	Test Cases	A set of input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. The purpose of the test cases is to state how the testing will be implemented during testing and are based on the TOM.
4	Test Summary Report	The Test Summary Report provides a summary and evaluation of the test phase on objective data and a recommendation to move to the next stage or to execute further tests based on results In general the Test Summary Report must contain, but is not limited to: a. executive summary; b. test coverage results: i. tests planned; ii. tests planned and not run; iii. deviations from the plan; and iv. tests executed and results; c. Defect summary plus impact analysis of open Defects; Recommendations to move to the next stage or to execute further tests based on results.

16.6 Defect Severity Definitions

16.6.1 The following Defect severity definitions shall apply for all Test Phases, excluding Systems Testing.

Severity 1

Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists.

Examples of Severity 1 Defects include:

a) safety issues; or

b) REM or a core component of REM is inoperable.

The Customer will not take Severity 1 Defects into the next Test Phase or to the Production Environment.

Severity 2

High Impact – Assigned to major errors. Some key REM functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality, but the Defect must be resolved before the component can be migrated to the next Test Phase or to Production Environment.

Examples of severity 2 Defects include:

a) the REM or a component of REM is operable however one or more functions do not work according to the Functional Specifications or have not been delivered and no acceptable workarounds exist;

b) any issue with data accuracy or integrity which may cause confusion among the Customer end-user community.

The Customer would not usually consider taking Severity 2 Defects into the next test phase or to the Production Environment unless there were exceptional circumstances. The Customer would need to have understood and accepted the risk/impact via approval of the TSR. There is an expectation that any Severity 2 Defects would be resolved by the next release of the Licensed Software.

Severity 3

Medium Impact – Assigned to minor errors. Some functionality does not conform to the Functional Specifications or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact on the Customer's end users. Testing can continue and the component can be migrated to the next test phase or to the Production Environment providing exit criteria are met.

Examples of Severity 3 Defects include REM or an REM component is operable however one or more functions do not work according to their Functional Specifications or have not been delivered and acceptable workarounds exist.

The Customer may consider (at its sole discretion) taking a small number of Severity 3 Defects into the next test phase or the Production Environment provided the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the System. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

Severity 4

Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on the Customer end users or the System. Examples of Severity 4 Defects include:

a) misspelled (but not misleading) text;

b) inconsistent fonts; or

c) poor grammar.

The Customer may consider (at its sole discretion) taking a small number of Severity 4 Defects into the next test phase or the Production Environment providing the cumulative impact of these Defects and associated work arounds are acceptable to the Customer and do not damage the reputation of the Customer or the ROC Program. The Customer would need to have understood and accepted the risk/impact via approval of the TSR.

16.7 Defect Priority

16.7.1 Each Defect is also assigned a priority level which indicates to development team(s) the order in which defects of the same severity should be addressed. Priorities which can be assigned to defects within the ROC Program are:

a) 1 – High;

b) 2 – Medium; or

c) 3 – Low.

Assuming open Defects of every severity and priority combination, the order in which Defects should be addressed is outlined in the table below:

Order	Severity	Priority
1	Severity – 1	Priority – High
2	Severity – 1	Priority – Medium
3	Severity – 1	Priority – Low
4	Severity – 2	Priority – High
5	Severity – 2	Priority – Medium
6	Severity – 2	Priority – Low
7	Severity – 3	Priority – High
8	Severity – 3	Priority – Medium
9	Severity – 3	Priority – Low
10	Severity – 4	Priority – High
11	Severity – 4	Priority – Medium
12	Severity – 4	Priority – Low

16.8 SAT Exit Criteria:

#	Deliverable	Description
1	Test Cases	All test cases have been executed and the outcome recorded in the Contractor's Test Management Tool (**TMT**). An explanation has been provided by the Contractor to the Customer for any test case which has not been executed by the Contractor. The Parties acknowledge and agree the TMT used by the Contractor will be Jama, as compared to HP ALM used by the Systems Integrator and Customer.
2	Recording Defects	All Defects identified during the test phase have been recorded in the Defect Management Tool (DMT) and are available for review. The Parties acknowledge and agree the DMT used by the Contractor will be ITSM, as compared to HP ALM used by the Systems Integrator and Customer.
3	Severity 1 / Severity 2 Defects	No Severity 1 or Severity 2 Defects outstanding.
4	Severity 3 / Severity 4 Defects	An agreed action plan is in place to address outstanding Severity 3 and Severity 4 Defects, including target resolution time frame.

#	Deliverable	Description
5	Defect Acceptance	The number of outstanding Severity 3 and Severity 4 Defects and the cumulative impact of these Defects on REM must be accepted by the Customer. Once all test exit criteria for the test phase have been met, the Contractor must produce a TSR to demonstrate the outcome of the testing phase. Where exit criteria have not been met, the test phase shall continue until exit criteria has been met.
6	Defect Deviation	Any deviation from the agreed exit criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management.

17 Deployment (Release 1-T2) Phase

17.1 Overview

17.1.1 The Objectives for these Services are that:

a) the Licensed Software is deployed into the relevant test or Production Environment;

b) deployments into the Customer relevant environments are managed so that any disruption to the environments that can be avoided is avoided, or where avoidance is not possible, kept to a minimum;

c) deployments are managed in accordance with the Customer's Enterprise Release Framework and Change Management process.

This section encompasses the Services required to confirm the readiness of REM 2017.R2 for deployment into the relevant test or Production Environment.

17.1.2 The Contractor must ensure that:

a) all of the Services that it is obliged to supply are supplied and completed; and

b) all Deliverables that it is obliged to supply are accepted by the Customer (or its nominee), on or before the relevant date(s) specified in the Project Schedule.

17.2 Entry Criteria

17.2.1 The Entry Criteria for the Deployment (Release 1-T2) Phase are specified in the table below:

#	Criterion	Description
1	Licensed Software	The Licensed Software has been received by the Customer from the Contractor.
2	Documentation	The Contractor has provided details of the software and hardware configurations required to enable the Licensed Software to be tested in the relevant environments (as described in the TEMS and the Release 1-T2 Architecture Specification).

#	Criterion	Description
3	Environments	The Customer has set up the following environments in accordance with the Release 1-T2 Architecture Specification and as described in the TEMS: a. REM Configuration; b. REM Demo; c. Development; d. System Test; e. SIT; f. UAT; g. Pre-PROD; h. PROD; i. Training; and j. Disaster Recovery*. * Out of scope for the Contractor's Services (the **Non Production Environment**).

17.3 Services

17.3.1 The Contractor will provide a Systems Administrator to provide the following Services for each Customer Non Production Environment, Pre-Production Environment and Production Environment. Unless otherwise agreed between the Parties, the Systems Administrator's role concludes on 30 April 2018.

17.3.2 The Systems Administrator will perform the Services described in the table below:

#	Service	Description
1	Installation and Deployment	Install and Deploy REM application versions of the Licensed Software on the Customer Environment: a. REM Incident Management software; and b. additional necessary software packages.
2	System Level Configuration	Configure REM application on system level - various configuration and start up files.
3	Data Import and Export	Import and export of database dumps: a. as preparation of the test systems; b. as preparation for the production environment; and c. for debugging and Defect reproducing reasons.
4	Schema Updates	Perform Database Schema Updates, as required.
5	Monitoring Tools	Installation and configuration of monitoring tools according to Customer standards.
6	Manage Users	Setup, manage and track users and associated access levels.
7	Integration	Integration with Sub-Systems and TIBCO: a. supporting the Systems Integrator & engaged Customer Application Support teams; b. configure REM instance connectivity; c. assistance in configuration of REM backend; and d. supporting and system configuration of direct integrations. For clarity, if the Customer requires any further assistance from the Contractor in respect of any third party voice communications system (VCS) product over and above integration issues on the Contractor side of the standard interface of REM 2017.R2, this assistance will be negotiated by the Customer and the Contractor and outlined in a Change Request.
8	Sanity Testing	Perform basic sanity testing of the integration and configuration.
9	Connectivity Testing	The Contractor shall: a. validate REM instance configuration via point to point connectivity testing; and b. verify all required connectivity from/to REM instance on each non-production environment.

#	Service	Description
10	Defect Management	The Contractor shall: a. record, verify, investigate and assist to resolve all Severity 1 and Severity 2 Defects recorded during system shakeout in each environment; b. record, verify, investigate and assist to resolve all REM application related Defects recorded during each test phase; c. System Level issue tracing: i. identification of problem sources; ii. log file locating; iii. log file extraction and handling; iv. creation of Defect description; v. reproduction of the Defect (includes knowledge of EMC and DMC and basic understanding of system functionality); and vi. filing an error report in the Contractor's Defect Reporting Tool ITSM.
11	Production Support	The Contractor will provide support after REM Goes Live in the Production Environment on request from the Systems Integrator or the Customer. Unless otherwise agreed, post-production support will be priced on the T&M Rates in the PIPP.

17.4 Responsibilities

17.4.1 The Customer will:

a) establish and disseminate to the Contractor and Systems Integrator, an ERM framework to permit seamless deployment;

b) provide timely notification to the Customer's ERM team to schedule the REM deployment in accordance with the ERM framework;

c) set up and maintain operational test environments that are functionally equivalent to the Production Environment where the Systems Integrator or Contractor needs such operational test environments to fix Defects and perform regression testing; and

d) log all requests for support in accordance with 17.3.1 in ITSM. For clarity, this does not prevent Customer Personnel from discussing matters or issues directly with the Systems Administrator.

17.5 Deliverables

17.5.1 The Contractor shall provide, or contribute to the following Deliverables developed by the Systems Integrator.

#	Deliverable	Description
1	Handover Plan	The Hand Over Plan is a Systems Integrator Deliverable outlining: Technical documents required to support REM that includes as built specifications documents etc; Training Session(s) to be provided by the Contractor and/or Systems Integrator (as required) to enable proficiency in the use of REM, as well as basic support, including: A. number of students; B. duration of course; C. outline of content; and D. key dates. **Note**: The Handover Plan relates to REM only and excludes the Customer Environment.
2	Post Implementation Verification Report	The Contractor shall, in conjunction with the Systems Integrator, provide any required assistance to the Customer to develop the Post Implementation Verification Report which outlines: a. the issues that arose during the Deployment (Release 1-T2) Phase that necessitate recording; b. lessons learned from the Deployment (Release 1-T2) Phase that may be used to mitigate further problems or repeated to ensure seamless delivery of services; and c. follow-up actions including detailing any deferred scope.
3	Production and Pre-Production Installation Run-Sheets	REM Pre-Prod and Prod installation Run Sheets based on ROC Technology Implementation Plan template.

18 Training (Release 1 – T2)

18.1 Overview

18.1.1 The Contractor shall provide the following training to enable the Customer to use, operate, administer and maintain REM.

18.2 Services

18.2.1 The Contractor shall deliver the following Training Services to the Customer.

Item	Service	Description
1	Operator “Train the Trainer” Training	Provision of operator “Train the Trainer” Training, including the preparation of training materials. This training is intended for staff responsible for training the Customer staff required to operate REM. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functional and operational principle of an incident management system; b. explain the functionality of REM; c. explain the typical use cases and associated workflows; d. perform operative incident management using REM at an operator place independently; e. have an overview of the system actors, support structure and supplementary application documentation; and f. explain, teach and demonstrate the REM operational content in the Customer’s learning environment. This Service includes: a. design of “Train the Trainer” training course to meet the aims outlined above; b. provision of all training materials; and c. provision of a single “Train the Trainer” a single training course to the Customer Personnel (3 continuous days in length). The Customer will provide the training facilities required to conduct the courses.
2	System Administration training	Provision of System Administration Training, including the preparation of training materials. This training is intended for staff responsible for the system management and maintenance of REM. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. The aim of the course is to provide attendees with training to enable the attendees to: a. identify components of REM 2017.R2 and assign them to system structures; b. explain the functionality and purpose of the individual components of REM 2017.R2, including system interfaces; c. interpret operational and technical messages of REM 2017.R2 and analyse causes; d. carry out maintenance working steps for administration of REM 2017.R2 components according to the system administration manual; e. carry out software update procedures for REM 2017.R2; f. name, readout and interpret relevant log files of REM 2017.R2; g. assess the technical and operational effects of these actions; and h. provide second level support requirements.

Item	Service	Description
3	Application Administration Training	Provision of Application Administration Training, including the preparation of training materials. The Contractor will provide and run a single course over 3 days, for up to 12 attendees. This training is intended for staff responsible for the data management and configuration of REM. The aim of the course is to provide attendees with training to enable the attendees to: a. explain the functionality of REM b. explain the functionality of the REM DMC; c. explain the functional data structure of REM; d. maintain REM configuration data; e. configure the responsibility model; f. configure the track network; g. configure workflows; and h. carry out user, role and group administration.

18.3 Deliverables

18.3.1 The Contractor shall provide the following Deliverables for the training courses it will deliver to the Customer:

#	Deliverable	Description
1	Training Material Operator Train the Trainer Training	Update REM Operator Train the Trainer Training consisting of trainer PowerPoint slide pack in consultation with the Customer and the System Integrator. This Deliverable is provided in the Contractor's standard format.
2	Training Material System Administration	Contractor is responsible for updating the training material for System Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual. This Deliverable is provided in the Contractor's standard format.
3	Training Material Application Administration	Contractor is responsible for updating the training material for Application Administration (on USB medium), consisting of: a. trainer PowerPoint slide pack; and b. Server Installation Manual. This Deliverable is provided in the Contractor's standard format.

Section D – Common Terms

19 Acceptance, Change Request and Assumptions

19.1 Acceptance

19.1.1 The Contractor must:

a) in collaboration with the Customer and Key Contractors (as required) participate in workshops and liaise with appropriate Personnel to ensure that all requirements are confirmed and understood; and

b) liaise with the Customer and Key Contractors (as required) to ensure that all Deliverables are fit for purpose and meet the agreed Acceptance Criteria.

19.1.2 The Deliverables to be provided by the Contractor to the Customer will be reviewed for accuracy and completeness in order to be accepted. The definition of completeness can be subjective, as some aspects of a Deliverable will be further refined as part of the Implementation & Maintenance Phase. The Deliverables must be approved as a pre-condition to the entering the Build Phase, unless otherwise waived by the Customer in its sole and absolute discretion.

19.1.3 Deliverables will be reviewed by the System Integrator acting as the Customer's nominee. Where the System Integrator deems that a Deliverable is accurate, suitably provides the required information and/or detail and accords with the Additional Conditions, the System Integrator will request the Customer's endorsement of that Deliverable. This endorsement will assist the System Integrator in finalising the acceptance of a Deliverable.

19.1.4 The following points are intended to clarify what approval/endorsement can be via email, or require a signature, see process swim-lane below for further detail:

a) Milestone Acceptance Forms must be signed in writing by the Contractor's Project Director and Customer's Program Manager.

b) Deliverables must be approved by the System Integrator's Project Manager or the System Integrator's Project Director; notification by email of the approval is sufficient.

c) Deliverables must be endorsed by a Customer's delegate; notification by email of the endorsement is sufficient.

d) Contractor's Documents/Deliverables must be approved by a Customers Program Delegate; email approval is sufficient.

e) The Contractor will track the status of Deliverables submitted for approval / endorsement and provide a weekly tracking sheet as part of the project status report.

f) The Customer will authorise a nominated delegate for each Product area that will have the authority to endorse/approve submitted Deliverables.

g) Upon each Deliverable submission, approval/endorsement is expected within the timeframes stipulated in the Additional Conditions or such other time as may be agreed between the Parties. A request for approval/endorsement extension of a Deliverable may be requested by the Customer to the Contractor in exceptional circumstances.

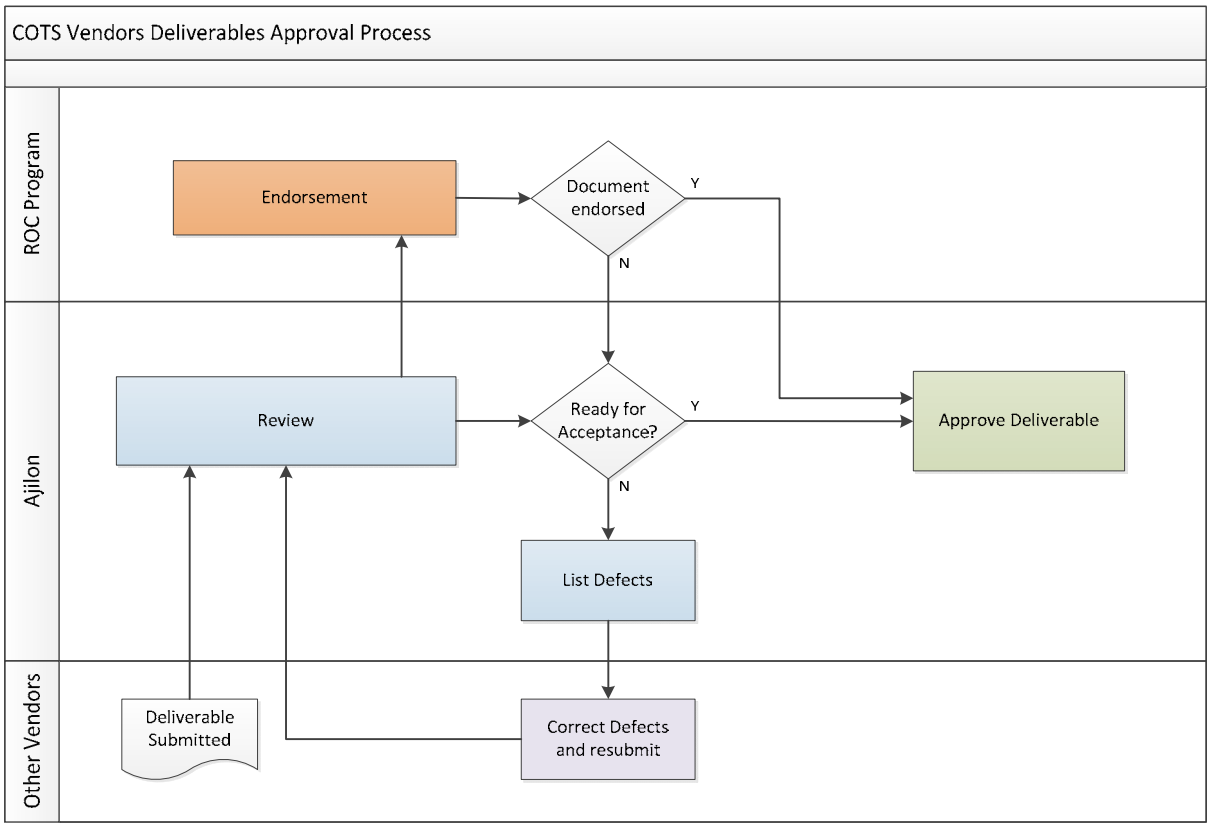
h) Deliverables not approved/endorsed by the System Integrator/Customer (as applicable) will be returned to the Contractor with a list of Defects (tracked in a spreadsheet with reasonable detail) to be rectified to gain approval/endorsement by the System Integrator/Customer (as applicable).

i) The re-submission consists of rectified defects only and must be clearly identified as such.

j) The Deliverable is considered approved once the defects have been rectified and accepted.

The approval process flow is identified in the following diagram:

Contractor Deliverables:



19.1.5 The Contractor must supply the Deliverables which are part of the Customer Contract in accordance with, and on or before the relevant date(s) specified in the Project Schedule.

19.1.6 The Contractor must ensure that the System described in the Detailed Design:

a) accurately and comprehensively identifies and records all the Deliverables for the Detailed Design Phase;

b) if implemented, meets the Requirements and allows the Customer to achieve the ROC Technology Solution Objectives; and

c) does not negatively impact the performance or functionality of any part of the Customer's Environment, including the Customer's current solution.

19.1.7 Subject to section 19.1.6, the Customer (or its nominee) must review a Deliverable submitted during the Customer Contract in accordance with the Additional Conditions.

19.1.8 The Contractor agrees that any review, comment, approval, endorsement or election or failure to review, comment, approve, endorse or elect on the part of the Customer (or its nominee) under the Customer Contract:

a) does not limit or affect the Services or Deliverables under this Customer Contract, including in respect of the Detailed Design;

b) does not limit or affect the provision of the Contractor's warranties or indemnities;

c) does not constitute any express or implied representation, election, waiver or acquiescence on the part of the Customer;

d) does not constitute deemed approval by the Customer to any amendment or Change Request to the Services or Deliverables; and

e) does not constitute grounds for an automatic extension of time or automatic adjustment to any payments.

19.2 Change Request

19.2.1 If:

a) during the term of the Customer Contract, the Contractor identifies that the Customer's requirements for the Solution have materially changed from the Requirements (**Variation**); and

b) that Variation changes the manner in which the Contractor is required to perform its obligations under this PIPP to such an extent that the Contractor will incur material additional costs in performing those obligations,

the Contractor is entitled to give the Customer a Change Request to adjust the Contract Price to take into account those additional costs.

19.2.2 If:

a) the Contractor is entitled to give the Customer a Change Request under section 19.2.1; and

b) the Contractor does not give the Customer that Change Request at the same time that the Contractor submits a Deliverable,

the Contractor will not be entitled to give the Customer a Change Request for an increase in the Contract Price as a result of the Variation.

19.3 Not used

19.4 Summary Table of Deliverables and expected delivery dates

19.4.1 **Release 1**

(Note: all timeframes regarding the provision of Deliverables will be agreed during the Detailed Design Phase and documented in the associated draft Project Schedule)

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Detailed Design				
WBS 2	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 3	Release 1 Functional Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 4	Release 1 Non-Functional Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 5	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 6	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 7	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 8	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 9	Updated Implementation Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 10	Release 1 Implementation Plan (draft)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 11	Technology Test Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 12	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 13	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 14	Updated Release 1 Product Gap Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 15	Release 1 System Test Plan	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 16	Requirements Traceability Matrix for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 17	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 18	Operating Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 19	Draft recommended ROC organisation structure	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 20	Change Impact Analysis (Release 1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 21	Release 1 Training Needs Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1 Updated Detailed Design				
WBS 22	High Level Solution Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 23	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 25	Release 1 Non-Functional Design	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 26	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 27	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 28	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 29	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 32	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 33	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 35	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 36	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1 New Deliverables				
WBS 37	Release 1 Technology Implementation Plan	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 38	Interface Documentation for SIRI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 39	Shadow Data Base Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 40	Interface Documentation for Notification Functionality (REM)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 41	Documentation of the REM Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 42	User Manual for Emergency Management Client (EMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 43	User Manual for Data Management Client (DMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 44	User Manual for Web Portal	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 45	User Manual for REM Mobile 2016.R1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 46	IMS (REM 2016.R1) Licensed Software	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 47	Licensed Software (REM Mobile 2016.R1)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
REM Mobile Non-Production Deployment				
WBS 51	REM Mobile Software Update (QR Code deployment)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 52	REM Mobile Configuration Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 53	REM Mobile Deployment Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 54	REM Mobile Hand-over to Support Documentation (handover of non-production processes & procedures)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 55	Update of REM Mobile Functional Specification (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 56	Update of REM Mobile Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 57	Update of REM Mobile User Manual (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58	Update of Requirements Traceability Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
REM & REM Mobile 2016.R2				
WBS 58A	REM System/Software Delivery (REM Release 2016.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 58B	REM System/Software Delivery (REM Mobile 2016.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 58C	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58D	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58E	Update of Interface Documentation for SIRI (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58F	Interface Documentation for Notification Functionality (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58G	Update Documentation of the REM 2016.2 Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58H	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58I	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 58J	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58K	Update Requirements Traceability Matrix for REM 2016.R2	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58L	Test Summary Report for System Test (REM Release 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 58M	Test Summary Report for System Test (REM Mobile 2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SAT Testing Deliverables				
WBS 66	SAT Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 67	SAT Test Cases (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 68	SAT Test Summary Report (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 69	SAT Test Objective Matrix (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 70	SAT Test Cases (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 71	SAT Test Summary Report (2016.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
System Testing for TIBCO and Other Interfaces				
WBS 72	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 73	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 74	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 75	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SIT				
WBS 76	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 77	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 78	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 79	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Load and Performance Testing				
WBS 80	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 81	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 82	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 83	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
User Acceptance Testing				
WBS 84	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 85	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 86	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 87	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Deployment Deliverables				
WBS 88	Hand Over Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Training				
WBS 89	Train the Trainer Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 90	System Administration Train Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 91	Application Administration Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

19.4.2 **Release 1-Tranche 2**

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Detailed Design				
WBS 92	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 93	Release 1 Functional Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 95	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 96	Project Communication Plan for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 97	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 98	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 99	Updated Implementation Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 100	Release 1 Implementation Plan (draft)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 101	Technology Test Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 102	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 103	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 104	Updated Release 1 Product Gap Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 105	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 106	Requirements Traceability Matrix for Release 1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 107	Technology Environment Management Strategy	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 108	Operating Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 109	Draft recommended ROC organisation structure	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 110	Change Impact Analysis (Release 1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 111	Release 1 Training Needs Analysis	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1 Updated Detailed Design				
WBS 112	High Level Solution Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 113	Release 1 Architecture Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 114	Release 1 Non-Functional Design	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 115	Release 1 Integration Specification	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 116	Project Communication Plan for Release	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
	1		Schedule	Schedule.
WBS 117	Release 1 Data Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 118	Release 1 Data Technical Analysis Outputs	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 119	Updated Project Management Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 120	RACI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 121	Release 1 System Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 122	Technology Environment Management Strategy	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Release 1-T2 New Deliverables				
WBS 123	Release 1 Technology Implementation Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 124	Interface Documentation for SIRI	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 125	Shadow Data Base Documentation	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 126	Interface Documentation for Notification Functionality (REM)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 127	Documentation of the REM Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 128	User Manual for Emergency Management Client (EMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 129	User Manual for Data Management Client (DMC)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 130	User Manual for Web Portal	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 131	User Manual for REM Mobile 2016.R1	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 132	IMS (REM 2016.R1) Licensed Software	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 133	Licensed Software (REM Mobile 2016.R1)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
REM Mobile Non-Production Deployment				
WBS 134	REM Mobile Software Update (QR Code deployment)	Software	As specified in the draft Project	45 Business Days of Clear Running of the Licensed Software

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	
135	REM Mobile Configuration Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 136	REM Mobile Deployment Process Documentation	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 137	REM Mobile Hand-over to Support Documentation (handover of non-production processes & procedures)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
138	Update of REM Mobile Functional Specification (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 139	Update of REM Mobile Test Objective Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 140	Update of REM Mobile User Manual (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 141	Update of Requirements Traceability Matrix (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
REM & REM Mobile 2017.R2				
WBS 142	REM System/Software Delivery (REM Release 2017.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 143	REM System/Software Delivery (REM Mobile 2017.R2)	Software	As specified in the draft Project Schedule	45 Business Days of Clear Running of the Licensed Software
WBS 144	Update of Gap Analysis (REM and REM Mobile Release 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 145	Update of Functional Specification (REM and REM Mobile Release 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 146	Update of Interface Documentation for SIRI (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 147	Interface Documentation for Notification Functionality (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 148	Update Documentation of the REM 2017.2 Data Model	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 149	Update of User Manual for Emergency Management Client (EMC) (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 150	Update of User Manual for Data Management Client (DMC) (REM 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 151	Update of User Manual for REM Mobile (REM Mobile 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
WBS 152	Update Requirements Traceability Matrix for REM 2017.R2	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 153	Test Summary Report for System Test (REM Release 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 154	Test Summary Report for System Test (REM Mobile 2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SAT Testing Deliverables				
WBS 155	SAT Test Objective Matrix (2017.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 156	SAT Test Cases (2017.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 157	SAT Test Summary Report (2016.R1)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 158	SAT Test Objective Matrix (2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 159	SAT Test Cases (2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 160	SAT Test Summary Report (2017.R2)	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
System Testing for TIBCO and Other Interfaces				
WBS 161	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 162	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 163	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 164	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
SIT				
WBS 165	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 166	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 167	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 168	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Load and Performance Testing				
WBS 169	Detailed Test Plan	Document	As specified in the draft Project	15 Business Days after delivery of the Deliverables as specified in the Project

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
			Schedule	Schedule.
WBS 170	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 171	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 172	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
User Acceptance Testing				
WBS 173	Detailed Test Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 174	Test Objective Matrix	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 175	Test Cases	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 176	Test Summary Report	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
Deployment Deliverables				
WBS 177	Hand Over Plan	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

Deliverable ID	Deliverable Name	Format	Expected Delivery Date	Expected AAD
Training				
WBS 178	Train the Trainer Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 179	System Administration Train Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.
WBS 180	Application Administration Training Material	Document	As specified in the draft Project Schedule	15 Business Days after delivery of the Deliverables as specified in the Project Schedule.

19.5 Contract Period

The Commencement Date is the date as stated the General Order Form with a contract expiry as specified in item 10 of the General Order Form or as terminated earlier in accordance with the terms of the Customer Contract.

19.6 Exclusions

Not applicable.

20 Implementation

20.1 Where work performed (Site)

All the necessary work must be carried out at the Contractor's site with the exception of requirements for meetings at the Customer's locations, or at nominated locations within Australia and agreed between the Parties.

20.2 Implementation strategy

20.2.1 The Contractor must provide an implementation strategy that includes:

a) an implementation strategy that meets the ROC Technology Solution Objectives; and

b) how the Contractor will implement its Solution as part of the ROC Technology Solution and ensure that the Customer can continue to meet its operational and safety needs.

20.2.2 The implementation strategy will follow the approach outlined in the Contractor's systems integration methodology and provide information on key items including the items specified in Technology Implementation Strategy which is included in Schedule 2 of the Customer Contract (Agreement Documents).

21 Project Management

21.1 Advice and knowledge transfer

The Contractor must provide all reasonable support required by the Customer to provide the Customer Supplied Items and perform the Customer's obligations.

21.2 Contractor assistance

If requested, the Contractor must participate in all necessary workshops with the Customer and Customer's stakeholders and subject matter experts, process owners and business analysts to verify:

a) that the Requirements are accurate and complete; and

b) the Contractor's proposed solution.

21.3 Customer Assistance

The Customer will endeavour to make the necessary third party system provider representatives or internal subject matter experts available for relevant workshops to assist in the provision of third party system interface and data specifications.

21.4 Risk management

21.4.1 As part of the Customer's Risk Management Plan, the Customer will maintain a shared risk and issues register for the ROC Technology Solution which:

a) identifies and tracks actual and potential problems, issues and risks relating to the ROC Technology Solution which might adversely impact the successful completion of the ROC Technology Solution; and

b) includes delivery risks,

(**Issues Register**).

21.4.2 The Customer must provide the Contractor a draft of the Issues Register within 5 Business Days of the Contract Date.

21.4.3 As at the date the Contractor provides the a draft of the Issues Register under section 21.4.2, the Contractor acknowledges that it has inspected the draft Issues Register provided by the Customer and to the best of its knowledge the Issues Register accurately and comprehensively defines all of the delivery risks.

21.4.4 The Contractor must report to the Customer:

a) any issues or risks (including any delivery risks) that it identifies that are not specified in the Issues Register immediately on becoming aware of those issues and risks; and

b) any change in the status of the delivery risks, immediately on becoming aware of that change in status.

21.5 Cooperation with Key Contractors

21.5.1 The Contractor must, at no additional cost to the Customer:

a) coordinate and cooperate with the Key Contractors in relation to the Project;

b) without assuming any liability for the contents of an Key Contractor's Detailed Design documents, provide all assistance and cooperation reasonably required by the Key Contractors;

c) comply with all other requests of the Key Contractors to the extent relevant to the Contractor's Services or Deliverables;

d) not delay or interfere with the performance of the Key Contractors' Services or Deliverables in relation to the Project;

e) notify the Customer as soon as reasonably possible if it becomes aware of any delay to a Key Contractor's Services or Deliverables in relation to the Project; and

f) ensure that all information provided under this Section by the Contractor is accurate and to the extent possible, complete.

21.6 Communication with Key Contractors

21.6.1 The Contractor must not, without the Customer's prior written consent:

a) give a Key Contractor a direction or instruction which will or is likely to vary the Key Contractor's scope in relation to the Project;

b) give a Key Contractor a direction or instruction which will or is likely to change the amount payable by the Customer to the Key Contractor in relation to the Project;

c) give a Key Contractor a direction or instruction which will or is likely to delay the time that the Key Contractor is obliged to complete Services or Deliverables in relation to the Project;

d) accept directions or instructions from any Key Contractor in relation to the Services or the Deliverables; or

e) consent to any waiver, release, variation or reduction to or of any obligation of any Key Contractor in relation to the Services or the Deliverables.

21.6.2 The Contractor must notify the Customer in writing as soon as reasonably possible after it becomes aware of any Dispute between the Contractor and a Key Contractor, or between Key Contractors, in connection with the Project.

21.7 Disputes between the Contractor and Key Contractors

21.7.1 The Contractor must use its reasonable endeavours and act in good faith to resolve a Dispute with a Key Contractor by discussion and negotiation without the Customer's involvement.

21.7.2 Where the Contractor has notified the Customer under section 21.6.2 or the Customer becomes aware of a Dispute and the Dispute remains unresolved for greater than 2 calendar days, the Customer will make a direction with respect to the Dispute and the Contractor must comply with the direction.

21.7.3 The Contractor acknowledges and agrees that the direction made by the Customer is final and binding.

21.7.4 The Contractor must continue to comply with its obligations under the Customer Contract even if a Dispute exists.

21.8 Reliance on Key Contractors' work

The Customer does not warrant the accuracy or correctness of any reports, plans, drawings, documents or information provided by Key Contractors in relation to the Project. The Customer has no liability to the Contractor as a result of the Contractor's reliance on any such reports, plans, drawings, documents or information.

21.9 Return obligations

The Contractor must return all Customer equipment and Customer Supplied Items provided to the Contractor for the purposes of the Project on or before the expiry of the Contract Period.

21.10 Delivery Address

The Contractor must deliver the Deliverables to the Customer at the location specified in Item 2 of the General Order Form.

The Contractor must comply with all reasonable requests of the Customer when access the delivery address as well as any requirements specified in Item 25 of the General Order Form.

22 Customer Supplied Items (CSI) and Customer obligations

22.1 CSIs and obligations

22.1.1 Subject to section 22.2, the Contractor acknowledges that the Customer has provided the following CSI items :

a) Customer's Enterprise Release Framework and Change Management process

b) project scope (as documented in the architecture blueprint);

c) functional requirements (as provided in the RFP);

d) non-functional requirements (as provided in the RFP);

e) draft Implementation & Maintenance Phase PIPP

f) system security requirements;

g) data management strategy;

h) project concept and review;

i) architecture blueprint;

j) systems impacted (existing);

k) interface specifications (where available);

l) technical policies and standards;

m) draft Procure IT (the Customer Contract and this PIPP);

n) ROC organization structure;

o) ROC Program high level roadmap;

p) draft ROC Program test management framework;

q) current processes;

r) concept of operations;

s) Transformation and Change Requirements v4.1;

t) ROC Systems Assurance and Planning Framework documents; and

u) ROC Data Architecture High-Level Strategy.

22.1.2 For Release 1 – Tranche 2, the Customer will provide the following CSI items:

a) Release 1-T2 Detailed Technology Business Requirements Specification (DTBRS);

b) Release 1 – T2 SAD; and

c) Telstra SMS Gateway Specification.

d) For SAT, SIT and UAT, the Customer will provide the necessary Sydney Trains SOE (Standard Operating Environments for Windows 7 and Windows 10) for concurrent testing at least 3 business days before start of the respective test cycles. Any delays in Customer Supplied Items (CSI) will cause delays in the current project schedule and will require another Change Request.

22.1.3 The Customer must:

a) ensure the members of its Personnel participating in the Project have the understanding of the business, and to-be processes, to be able to accurately articulate the requirements and the authority to make binding decisions about them;

b) provide the Contractor with appropriate access to all Customer facilities, and at all reasonable times, required by the Contractor for the completion of obligations relating to the Project, including providing the Contractor with all necessary identification material (badges, cards, etc.);

c) advise the Contractor of any change to architectural decisions relating to the Detailed Design that may impact on the Contractor's obligations under this PIPP;

d) assist in the management and timely co-operation of all third party suppliers of the Customer involved directly or indirectly in the Project as and when reasonably required for the Contractor to perform its obligations relating to the Project; and

e) make available Customer Personnel as and when reasonably required for the Contractor to perform its obligations under this PIPP.

22.1.4 The Parties acknowledge and agree that the Customer Supplied Items are those items specified in sections 22.1.1 and 22.2.

22.1.5 Any Customer Supplied Items which are needed by the Contractor but are not identified above may be provided by the Customer at its discretion and in accordance with the Customer Contract

22.2 CSI Facilities and Equipment

22.2.1 The Customer shall provide the following CSI, subject to the following conditions:

a) supply of venue and participation in all required customer workshops;

b) access to representative test environments and representative samples of to be imported master data;

c) for initial master data import and system configuration (users, roles, tracks, responsibilities), the required data has to be provided in the agreed format and validated; and

d) all necessary IT to enable the Contractor to discharge its obligations on site.

22.3 CSI verification

22.3.1 Within a reasonable time following receipt from the Customer, the Contractor shall inspect each item of CSI for completeness, accuracy, and adequacy for the purpose it is provided, and as otherwise specified in the Order Documents.

22.3.2 In the event the Contractor determines following inspection, that any item of CSI is deficient in terms of accuracy, completeness, adequacy, or is otherwise unfit for the purpose it was provided, with a reasonable time after becoming aware of the deficiency the Contractor shall notify the Customer of the deficiency in writing, providing full details of the deficiency.

22.3.3 Within a reasonable time after receiving a notice of CSI deficiency from the Contractor, to the extent that it is reasonable for the Customer to do so, the Customer shall repair or replace the relevant CSI and reissue to the Contractor.

22.4 Personnel

22.5 The Contractor must ensure that each member of the Contractor's Personnel allocated to perform the roles in Appendix B perform the roles described in Appendix B.

22.6 Any of the Contractor's Personnel who fill the roles in Appendix B will be Specified Personnel for the purposes of the Customer Contract.

22.7 The Customer must establish the teams and provide the Personnel to fill the roles described in Appendix B.

22.8 Nothing in Appendix B affects the scope of the obligations of either party as described in this PIPP.

22.9 Subcontractors

22.10 The Contractor will engage and make available relevant Subcontractor personnel to support the Contractor in the workshops with the Customer, except where the Customer has engaged the Subcontractor independently.

22.11 Approval by the Customer

22.12 Where the Customer must approve a Deliverable that is a Document, approval must be in accordance with section 13 of the Additional Conditions .

22.13 The Customer's approval of the Deliverables constitutes acceptance as contemplated under the Customer Contract.

23 Payment Plan

23.1 Price Release 1

23.1.1 The Price for the Contractor to undertake Release 1 of the ROC Program is [redacted] (ex GST). This comprises:

a) Costs expended to date for a component of the Licensed Software, the Release 1 Detailed Design, as well as certain Build activities bought forward for Release 1. These were delivered under the Release 1 Detailed Design Contract and detailed in the Table 1 below; and

b) The remaining activities associated with the implementing the Licensed Software, as well as REM Support and detailed in Table 2 below

Table 1

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Project Preparation and the Detailed Design (Release 1) Phase and Initial Implementation (Release 1) Phase			
The Services and Deliverables specified in sections 5 of this PIPP.	[redacted]		[redacted]
Team personnel efforts (until the end of November 2015) - Efforts on top of Detailed Design Phase (Release 1) Phase until the end of November			
Travel Costs			
Customisation for ROC a. The majority of the customisation efforts can be deferred until 30 November 2015. b. Assumes that remaining customisation			

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
efforts will be ordered through the implementation contract until the deferred date.			
License component The REM IMS.	[redacted]		[redacted]
Initial Implementation CR1			
Customisation for ROC - Interface customisation including GAP Features			
On/Off-Site Personnel Effort until 1 December 2015 to 29 February 2016			
Travel Budget			
Initial Implementation CR2 – REM Mobile and System Administration			
Licensed Software Note: The REM Mobile Software Licences , are only 40% of the full licence price for the respective module due to the reduced functionality required by the Customer for Release 1			
Customisation			
Documentation Deliverables			
System Administration			
Initial Implementation CR3 – 2016.R2 and REM Mobile 2016.R Deployment Support			
Customisation of Licensed Software (REM & REM Mobile 2016.R2)			
On/Off-Site Personnel Efforts for REM & REM Mobile 2016.R2 efforts.			
Services and Deliverables for QR code functionality to support testing			
Sub-Total			
GST			
Total			

23.1.2 The Contractor is to be paid for the items specified under 23.1.1 in accordance with the following milestones:

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Original Contract – Detailed Design Phase			
1	Mobilisation payment of 50% (of [redacted] of the Project Preparation Phase and Detailed Design Phase on or about the	[redacted]	1	[redacted]

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	Effective Date			
2	25% (of [redacted]) on 15th September 2015	[redacted]		[redacted]
3	25% (of [redacted]) on 15th October 2015			
	Original Contract - Initial Implementation Phase			
4	Mobilisation payment of 50% (of [redacted]) of the Initial Implementation Phase on execution of the Customer Contract.			
5	25% (of [redacted]) on 31 January 2016			
6	25% (of [redacted]) on delivery of Software specified in section 6.4 of this PIPP			
	CR1			
7	Initial Payment due upon Customer execution of CR1		1	
8	Progress Payment due on 31/01/2016		1	
9	Progress Payment of due on 29/02/2016		1	
10	Final Payment due upon delivery of the REM2016.R1 *		1	
	CR2			
11	Total CR 2 upon execution of CR2		1	
	CR3			
12	Initial payment on execution of CR3		1	
13	Milestone payment 1 due on 31st July		1	
14	Milestone payment 2 due on 30th Sept		1	
15	Milestone payment due upon delivery of the REM 2016.R2 and REM mobile 2016.R2.		1	
16	Final Milestone Payment due on 15/12/2016		1	
	Sub-Total			
	GST			
	Total			

23.1.3 The remaining Price payable under Release 1 has been calculated based on the milestones specified in the table below and represent the remaining Release 1 costs for the Services and Deliverables outlined in the PIPP. A breakdown of the Price is as follows:

Table 2

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Implementation Contract			
On-site/Off-Site personnel efforts and costs required to fulfil the Services and Deliverables obligations under the Customer Contract from 01/03/2016 until 10/12/2016.	[redacted]	1	[redacted]
Remaining Licensed Software fee for Release 1			
Sub-Total			
GST			
Total			

23.1.4 The Contractor is to be paid for the items specified under 21.1.2 in accordance with the following milestones:

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
1	Initial payment of 60% of [redacted] (Contract Value prior to Change Request 4) on execution of the Agreement Letter dated 19 August 2016 or Contract whichever occurs first.	[redacted]	1	[redacted]
2	Milestone payment of 15% on 30 September 2016			
3	Milestone payment of 15% on 30 November 2016			
4	Final payment of 10% on AAD of Release 1 Licensed Software and Go-Live of the IMS which will only occur on execution of a Customer Contract for Support.			
	Sub-Total			
	GST			
	Total			

23.2 Price Release 1-T2

23.2.1 The Price for the Contractor to undertake Release 1-T2 of the ROC Program is [redacted] (ex GST) and consists of:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Design Services and Documentation	[redacted]	1	[redacted]
Build - Implementation Services and Documentation		1	
Build - Software Customisation*		1	
Build – Licences		1	
Testing and Acceptance		1	
Deployment and Project Finalisation		1	
Sub-Total			
GST			
Total			

23.2.2 The Contractor is to be paid for the items specified under 23.2.1 in accordance with the following milestones. Nothing in this milestone payment schedule alters or affects the rights, obligations and liabilities of the Parties under this Customer Contract if AAD for Release 1-Trache 2 is not achieved by Target AAD.

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
1	Mobilisation	[redacted]	1	[redacted]
2	Commencement of the Build Phase (Release 1 – T2)		1	
3	Detailed Design (Release 1-T2) complete		1	
4	All Test Cases required to be provided by the Contractor have been accepted by the Customer		1	
5	SAT completed and accepted		1	
6	SIT completed and accepted		1	
7	UAT completed and accepted		1	
	PLUS, SUBJECT TO THE TERMS SET OUT IN MILESTONES 8, 8.1, 8.1A AND 8.1B , EITHER: **A. THE AMOUNT IN MILESTONE NO. 8; OR** **B. THE AMOUNTS IN MILESTONE NOS 8.1A AND 8.1B,** **BUT NOT BOTH.** In Milestone Nos 8, 8.1, 8.1A and 8.1B, the Target AAD means 31 May 2018, as adjusted or varied from time to time in accordance with the Customer Contract. For the avoidance of doubt:			

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	a. the Contractor will not be entitled to claim, and the Customer will not be liable to pay, any amounts under Milestone Nos 8, 8.1A or 8.1B, unless and until such time as Milestone Nos 1 to 7 have been completed and accepted by the Customer; and b. the aggregate of all amounts payable by the Customer to the Contractor under Milestone Nos 8, 8.1A and 8.1B will be capped at and will never exceed [redacted] (ex GST) (being 20% of the Price for Release 1-Tranche 2).			
8	If the AAD for Release 1-Tranche 2 is a date that is on or before the Target AAD, the Contractor will be entitled to claim the amounts set out in this Milestone No. 8 on the AAD.	[redacted]	1	[redacted]
8.1	If the AAD for Release 1-Tranche 2 is a date that is later than the Target AAD, then Milestone No. 8 will not apply and the Contractor will instead be entitled to claim the amounts set out in Milestone Nos 8.1A and 8.1B (below) at the times, and on the conditions, set out in those Milestone Nos.			
8.1A	10% of the Price for Release 1-Tranche 2 on the Target AAD (**Milestone Amount A**), provided that: a. the Contractor has not caused or, subject to Milestone 8.1A.1, has only immaterially contributed to, the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD; b. as at the Target AAD, the Contractor has passed all	[redacted]	1	[redacted]

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	relevant Acceptance Tests in respect of any Deliverables that have been performed, provided or otherwise delivered as at the Target AAD; and c. as at the Target AAD, any Deliverables that have been performed, provided or otherwise delivered are free from all Defects (other than Defects that are Minor). 8.1A.1. Without limiting any provision of the Customer Contract and provided that the Contractor has satisfied all other requirements of this Milestone No. 8.1A, the Contractor's entitlement to claim payment of Milestone Amount A will be reduced proportionately to the extent that the Contractor has immaterially contributed to the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD.			
8.1B	The balance of the Price for Release 1-Tranche 2 (being 10% of the Price for Release 1-Tranche 2) (**Milestone Amount B**) on the earlier to occur of the following: a. the AAD for Release 1 – Tranche 2; or b. the date that the Customer gives written notification to the Contractor that it is has elected or determined not to go-live or deploy REM 2017.R2 into the Production Environment; or c. termination of the Customer Contract by the Customer, provided that, in the case of Milestone Nos 8.1Bb. and 8.1Bc. above: d. the Contractor has not caused or, subject to Milestone	[redacted]	1	[redacted]

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	8.1B.1, has only immaterially contributed to the circumstances giving rise to the termination, election or determination of the Customer (as applicable); e. the Contractor has passed all relevant Acceptance Tests in respect of any Deliverables that have been performed, provided or otherwise delivered as at the date of such termination, election or determination (as applicable); and f. any Deliverables that have been performed, provided or otherwise delivered as at the date of such termination, election or determination (as applicable) are free from all Defects (other than Defects that are Minor). 8.1B.1 Without limiting any provision of the Customer Contract and provided that the Contractor has satisfied all other requirements set out in this Milestone No. 8.1B, the Contractor's entitlement to claim payment of Milestone Amount B will be reduced proportionately to the extent that the Contractor has immaterially contributed to the termination, election or determination of the Customer (as applicable). 8.1B.2 Without limiting any of the Customer's rights under the Customer Contract, if: a. pursuant to Milestone No 8.1Ba., the Contractor is entitled to claim Milestone Amount B on the AAD for Release 1 – Tranche 2; and b. pursuant to clause 8.1A.1., Milestone Amount A was reduced proportionately to the extent that the Contractor			

Milestone No	Deliverable	Price per Unit	Quantity	Extended Price
	immaterially contributed to the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD, then, on the AAD for Release 1 – Tranche 2 the Contractor will be entitled to claim the following amount (in addition to Milestone Amount B): c. an amount that is equal to the amount by which Milestone Amount A was reduced on account of the Contractor immaterially contributing to the circumstances giving rise to the AAD for Release 1 – Tranche 2 not occurring on or prior to the Target AAD; less d. an amount that is equal to any amounts that are due or payable by the Contractor to the Customer under or in connection with the Customer Contract as at the AAD for Release 1 – Tranche 2.			
	Sub-Total			[redacted]
	GST			
	Total			

23.3 Total Contract Price

The total Contract Price for this Customer Contract is:

Deliverable	Price per Unit (excl GST)	Quantity	Extended Price (excl GST)
Release 1			
Table 1	[redacted]	1	[redacted]
Table 2		1	
Release 1 – T2		1	
Total Contract Price (ex GST)			
GST			
Total (including GST)			

Release 1 Time and Materials for Pre-Production and Production Support

Role	Hourly Rate (ex GST)	Estimate amount of hours	Total costs (ex GST)
System Engineer	[redacted]	80 hours	[redacted]

Hours worked by the Contractor will be recorded on an ongoing basis and without the written consent of the Customer, the total number of hours and the value of those hours worked must not exceed [redacted](excluding GST). When the hours reach 80% of the number of hours outlined in the table above, the Contractor shall inform the Customer in writing and the Parties shall agree in writing on any further hours if required.

The Contractor shall provide the Customer with a timesheet for the activities performed by the System Engineer and provide a Correctly Rendered Tax Invoice on a monthly basis. The Contractor shall be entitled to issue a tax invoice on the last day of each month for the month's efforts. Payment terms are 30 days from Correctly Rendered Tax Invoice.

Resource Rate Card

The following Resource Rate Card applies for Time and Material based work outside the current scope of this Customer Contract. The rates presented below are subject to escalation of 2.5% per annum (on 1 January) and are only valid for Release 1.

In addition to escalation, the rates for Functional Consultant (day rate Sydney), Business/Systems Analyst/Senior Support Engineer (day rate Sydney) and Developer (day rate place of employment) are subject to movement based on the one year forward rate of Raiffeisen Bank International. The rates will be adjusted according to the percentage change compared to the base rate of 1.4920 (08/08/2016) to the revised base rate measured on the 10th January.

Resource Categories	Description	Day Rate Sydney (2016)	Day Rate Sydney (2017)	Day Rate Place of Employment (2016)	Day Rate Place of Employment (2017)
Project Manager - Senior/Employees Based in Sydney	Senior Project Manager responsible and accountable for overseeing one or more Project Managers' activities - 7 years' experience minimum	[redacted]			
Developer	Technical developer working on one or more delivery / workstreams in a Project - 3+ years' experience minimum				
Functional Consultant	Functional Consultant working on one or more functional streams in a project - 3 years' experience minimum				
Business/Systems Analyst/Senior Support Engineer	Analysis, high level and detailed business requirements for a number of areas - 5 years' experience minimum				
Flight	International				

Release 1-T2 CAPS Service

Role	Cost per device/per calendar month	Est. no. of devices per month	Maximum Total costs (ex GST)
CAPS Service Configuration via CAPS and issue of Apple Developer Certificates for the use in the Non-Production Environments only. (Physical configuration and deployment is done by a System Administrator and is not included in this fee)	[redacted]		

23.4 Payment

23.4.1 The Contractor must not issue a Correctly Rendered Invoice to the Customer prior to the milestone dates specified in section 23.1.4 and 23.2.2.

23.4.2 The Customer will pay all undisputed amounts in a Correctly Rendered Invoice issued by the Contractor within 30 days of the invoice being issued to the Customer.

23.4.3 CAPS Service - the used services will be invoiced at the end of each calendar quarter (September, December, March, June) in arrears, based on the number of devices actually used in conjunction with this service.

23.5 Termination for convenience

23.5.1 The Customer may by Notice in Writing at any time terminate the Customer Contract for convenience. In these circumstances the Contractor is entitled to the payments calculated in accordance with section 39 (Costs relating to a termination for convenience) of the Additional Conditions.

23.6 Liquidated Damages

23.6.1 Liquidated Damages are as described in the General Order Form.

24 Governance

24.1 Authorised Representatives

24.1.1 For the purposes of the Customer Contract:

a) the Customer's Authorised Representative is Tony Eid (or delegate as nominated by the Customer from time to time); and

b) the Contractor's Authorised Representative is Martin Rampl.

24.2 Management committee

24.2.1 For the purposes of the Customer Contract the following are members of the management committee:

a) Geoff Howard (or delegate);

b) Jason Galer;

c) Scott Kardash;

d) Martin Rampl;

e) Christian Dorner;

f) Ruth Trojan; and

g) Michael HSU

24.2.2 The Parties warrant and represent that their respective management committee members are authorised and properly qualified, informed and instructed to enable the management committee to properly assess progress under the Customer Contract.

24.3 Management committee function

24.3.1 The function that the management committee is to:

a) review and monitor progress under the Customer Contract; and

b) carry out any other functions stated in Item 16 of the General Order Form.

24.4 Management committee meetings

24.4.1 The management committee must meet no less than once a month during the Project at the times and locations specified by the Customer.

24.5 Management committee progress report

24.5.1 The Contractor must, at least 2 Business Days prior to a meeting pursuant to section 24.4, provide the Customer with a monthly progress report which at a minimum should include:

a) details (including dates) of Deliverables and Milestones (if any) commenced, completed or approved;

b) any delays or issues arising from the Project, including any known reasons for the delay or issue arising, and plans for the management of such delays and issues;

c) a review of any:

i) minutes and actions from the last meeting;

ii) risks and issues;

iii) details of any outstanding invoices and any payments that are about to become due;

d) draft updates of relevant parts of the Contract Specifications;

e) any new Change Requests or Contract Variations (if applicable);

f) reviewing progress of any draft Change Requests or Contract Variations (if applicable); and

g) any other additional details the Contractor considers should be brought to the attention of the Customer.

Appendix A – Updated Requirements

Release 1

1. Detailed Technology Business Requirements Specification (Release 1 DTBRS for REM Release 2016.2 v2.2);
2. Architecture Specification (Release 1 Architecture Specification v5.0);
3. Functional Specification (version 6.0);
4. Non-Functional Design (version 6.0);
5. Integration Specification (version 5.0);
6. ROC-PMO-RG-0002 Updated Release 1 Product Gap Analysis V5.01;
7. Requirements Traceability Matrix (version 4.0);
8. Technology Environment Management Strategy (TEMS) (version 10.0);
9. Technology Test Strategy version 6.1;
10. RACI (version 2.00);
11. Project Communication Plan version 4.0;
12. Data Technical Analysis Outputs version 6.0;
13. Updated Project Management Plan version 4.0;
14. Implementation Strategy (Updated Technology Implementation Strategy version 3.0); and
15. High Level Solution Design version 3.0.

Release 1 – Tranche 2

The Updated Requirements for the purposes of REM 2017.R2 and REM Mobile 2017.R2 will be the Software Build Documents.

Appendix B – Roles and responsibilities and Specified Personnel

1 Contractor roles and responsibilities and Specified Personnel

Name	Role	Responsibility
Ruth Trojan	Project Manager	a. Overall successful performance of the project within schedule and budget; b. Overall project management activities (planning, organising, controlling); c. Participation and action item processing for Project Management related topics with the Customer and System Integrator; d. Production of Weekly Status Reports, including the Project Highlight Reports; e. Attending Management Committee Meetings; f. Managing the Contractor team on-site/off-site; g. Managing Change Requests; h. Risk management – DRICA; i. Facilitating cooperation with the Key Contractors; j. Management and execution of all Project related communication between the System Integrator, CNS and the Contractor (including alignment meetings and technical clarification)
Bjoern Brunner	Solution Architect	a. Participation and action item processing in workshops with the Customer and System Integrator; b. Solution design; c. Architectural consultancy; d. Master Data mapping support; e. Support of integration and integration validation.
Michael HSU	Account Manager	a. Responsible for the account of the Customer.
Ben Beauchamp	Commercial Manager	a. Responsible for commercial and contract management.

Name	Role	Responsibility
Armin Steinwandter & Sandish Askurn	Solution Consultant	Solution Consultance Support (Solution Consultant); a. Participation and action item processing in workshops with the Customer and System Integrator; b. Product & Solution consultancy; c. Data provisioning support; d. Data management and configuration support.
Neha Rodey	Requirements. & Test Manager	a. Co-ordination of all requirements, engineering and test activities for the Project; b. Preparation of all Acceptance Test activities.
Reinhard Sollböck	Project Manager CNS	a. CNS project management activities (including planning, organising and controlling) b. Management and execution of all Project related communication within CNS (including technical alignment meetings and technical clarification)
Bruce Evans, Concetto LoVecchio	System Engineer	a. Support of System Integrator's system administration activities for Demo, Dev, SAT, SIT, UAT, Training environments until handover to the Customer; b. Master Data Import / Export (on-site).

2 Customer roles and responsibilities

Name	Role	Responsibility
Katherine Wilson	Lead Architect	Oversight of Technical Design for ROC Program
Jason Galer	Commercial Lead	Oversight of Commercial negotiations and management of ROC Agreements
Charlie Wahhab	Project Manager	Project Management of ROC Vendors
Reuben Bowd	Legal	Oversight of Legal activities
Scott Kardash	Release 1 Lead Project Manager	Release 1 cross stream lead project management.
As required	Customer Business Representatives	Provide Business functional requirements and inputs
As required	ROC BA Team Members	Provide Business Analysis skills as required
As required	ROC Architect Team Members	Provide Architecture skills as required
As required	ROC Business Processes Team Members	Provide Business Processes as required

Appendix C – Project Schedule

Release 1-T1

_A2016.3 Schedule - with ROC R1 testing (

ROC - R1 Ad hoc schedule - V190816.

Release 1-T2

ROC Release 1 Schedule. Version 0.9 UPDATED Issued 15/08/2016

2016

A2016.3 | Current Timeline | RG2 | SIT Deploy & Sanity Test (4 Weeks) | SIT Execution (5 Weeks) | RG3 | UAT Deploy & Sanity Test | UAT (6 Weeks) | RG4 | Regression / PVT (4 Weeks) | 10-Dec Tech Deploy | 2-Jan-17 Tech Deploy - ENV/EAM (TBC)

Prod Code - Start Data Load

Regression Goes Live

A2016.3 | Updated Timeline | RG2 | SIT Deploy & Sanity Test (4 Weeks) | SIT Execution - 8 Aug - 30 Sept (7 Weeks) | RG3 | Functional & Sanity Test | UAT Window - 3 Oct - 11 Nov (5 Weeks) | RG4 REG (2 Weeks) | PVT (1 Wk) | 10-Dec Tech Deploy | 2-Jan-17 Tech Deploy - ENV/EAM (TBC)

Prod Code - Start Data Load

Regression Goes Live

one weeks effort - To Be confirmed with ERM which may provide a

Need to ensure environment stability during PVT as the overlap with CST may impact throughput / user

Plan A- CST 7 Nov to 25 Nov (3 weeks)

Plan B- CST 14 Nov to 25 Nov (1 weeks)

Orginal

SIT ALL ROLES | Stop ing and Shut e | UAT Program 3 roles | UAT Business 3 roles | ROC Gate 1 | Cross Stream 5 roles | PVT

UAT Program All other roles | ERM Regression ALL Roles

End SIT cycle 2 (Risk)

Non Functional Testing

CURRENT

V008

Changes due to late SAT start due to commerical issues CR12 CR12 not approved yet

Did not eventuate

Stop ing and Shut e | SAT Cycle 1 | SAT Cycle 2 | SIT Cycle 1A | SIT Cycle 1B | SIT Cycle 2 | SIT Cycle 3 | Stop ing and Shut e | ROC Gate 2

Delayed by 3 working

Additional reference data mapping testing with three

SAT reduced from 10 to 7 working days

SIT Cycle 1A reduced from 10 to 5

UAT Program 3 roles | UAT Program All other roles | Cross Stream The 3 roles used for R1.0 only | ERM Regression ALL Roles | PVT

Non Functional Testing | ROC Gate 3

Functional Automation (QTP)

Option 9 A

If commercial issue resolved by COB Friday 5/8

Compressed SAT Cycle 2

Work additional days (weekend) on SAT testing - A CR will be required - additional cost.

Some low priority test cases descoped (Moderate level of risk acceptance required)

Did not eventuate

Delayed by 10 working days

SAT reduced from 10 to 5 working days

SIT Cycle 1A reduced from 10 to 5

Hard Deadline due to ERM schedule

Current

Updated Option 9 B

If commercial issue resolved by COB Friday 12/8

Compressed SAT Cycle 2

Work additional days (weekend) on SAT Testing - A CR will be required - additional cost.

~~Some low priority test cases descoped~~ (Moderate level of risk acceptance required)

Delayed by 15 working days

IMMS and REM Mobile available

SIT / UAT Overlap - 7 day overlap (priority test cases only)

SAT reduced from 10 to 7 working days

SIT Cycle 1A and 1B merged into a single cycle 1

UAT details T&C

UAT Deploy and Shake

Updated Option 9 C

If commercial issue resolved by COB Friday 19/8

Compressed SAT Cycle 2 and Compressed SIT Testing - A CR will be required - additional cost.

~~Some low priority test cases descoped~~ (Moderate level of risk acceptance required)

Delayed by 20 working days

SAT reduced from 10 to 7 working days

SIT / UAT Overlap - 7 day overlap (priority test cases only)

SIT Cycle 1A and 1B merged into a single cycle 1

UAT details T&C

UAT Deploy and Shake

V007

Changes due to IMMS Late CR??

Did not eventuate

Now SIT Cycle 1A and 1B available until 13

Non Functional Testing

Functional Automation (QTP)

A very early draft. For discussion purposes only

REM 2016.2 planning Assumes Option 9B

Delayed by 15 working days

SAT reduced from 10 to 7 working days

REM 2016.2 Deploy and Shake

SAT 2016.2 C1

Go / No Go

Auto Functional regression

UAT 2016.1 Program Tranche 2

UAT 2016.2 Business Tranche1

ERM Regression ALL Roles

Cross Stream Tranche 1

If necessary rollback to 2016.1

Auto Functional scripting and execution on R2016.1

Performance scripting 2016.1 in ????

Performance Testing 2016.1 in Pre-Prod

Performance Testing 2016.2 in Pre-Prod

UAT 2016.2 Business Tranche2 in 2017 TBA

Option 9B (15 days SAT delay)

+

REM 2016.2

+

PCR15 to add 4th SIT cycle (pending approval)

Version 10

Issued 22nd Sep 2016

SIT Cycle 4 ??

Training ?

SAT 2016.2 C1

UAT 2016.1 Program Tranche 2

UAT 2016.2 Business Tranche1

Cross Stream Tranche 1 2016.2

If necessary rollback to 2016.1

Script Maint 2016.2

Update ?? 2016.2

Auto Functional execution on R2016.2

SAT (Options 9A, 9B and 9C)	Working days	Orginal FTEs	Working hours per day	Effective Working hours per day	Additional Weekend hours	People Hours	Test Cases de-scoped
l (2 weeks)	10	1	8	6		60	
v (1 week)	5	1	10	8	8	48	20.0%

SIT Options 9A and 9B no impact

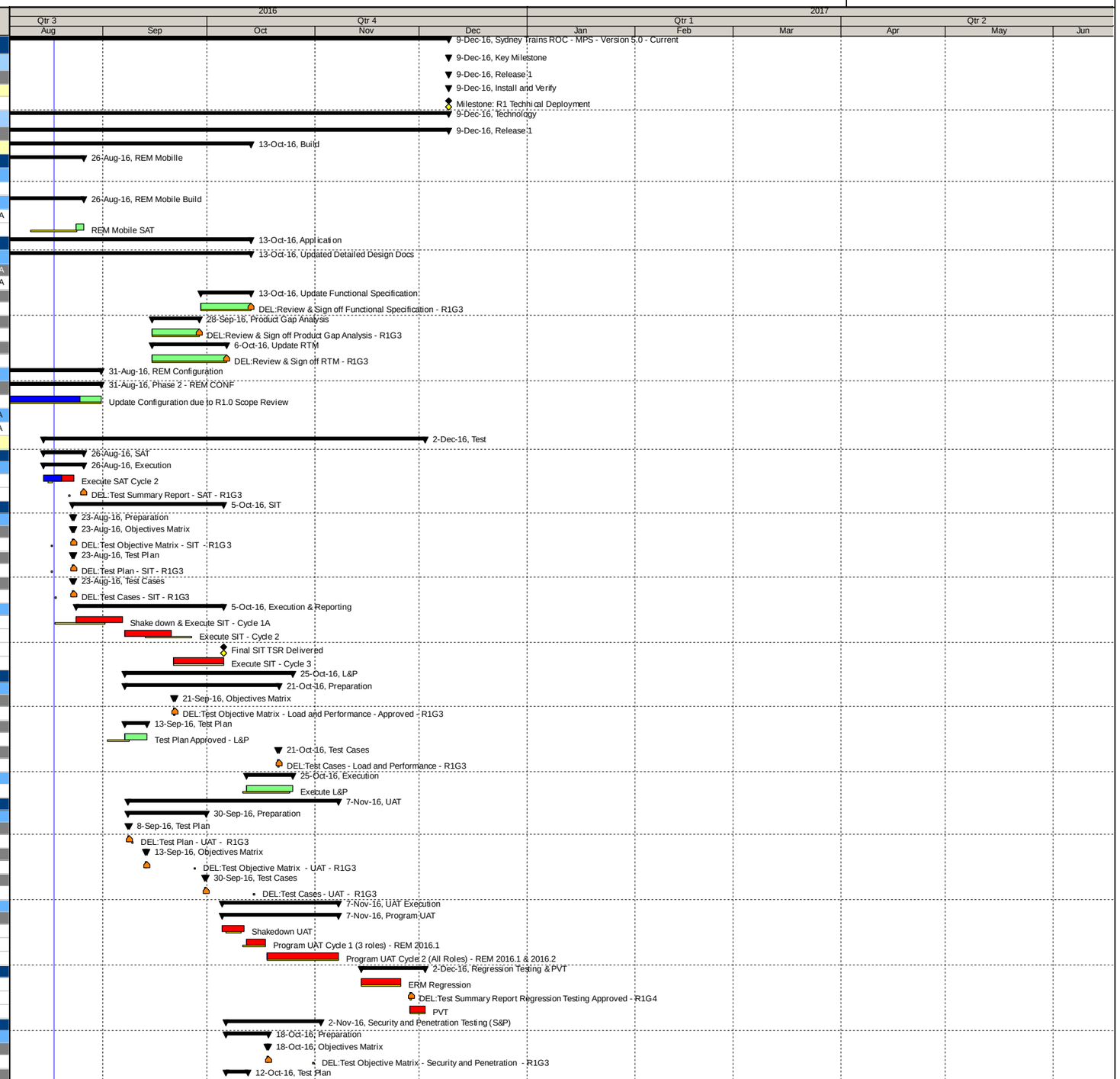
SIT 9C	Working days	Orginal FTEs	Working hours per day	Working hours per day	Additional Weekend hours	People Hours	Test Cases de-scoped
l (6 weeks)	30	3	8	6		540	
v (5 week)	25	3	9	7	0	525	2.8%

Time in leui Hours per FTE	Time in leui days
10	1.25

25	3.125

Sydney Trains Rail Operations Center (ROC)
Master Program Schedule Version 5.0 - *DRAFT - Work In Progress - ROC - All Streams*

#	Activity ID	Activity Name	Start	Finish
1	**Sydney Trains ROC - MPS - Version 5.0 - Current**		8-Feb-16 A	9-Dec-16
2	**Key Milestone**		9-Dec-16	9-Dec-16
3	**Release 1**		9-Dec-16	9-Dec-16
4	**Install and Verify**		9-Dec-16	9-Dec-16
5	TEC-KM-1150	Milestone: R1 Technical Deployment		9-Dec-16*
6	**Technology**		8-Feb-16 A	9-Dec-16
7	**Release 1**		8-Feb-16 A	9-Dec-16
8	**Build**		8-Feb-16 A	13-Oct-16
9	**REM Mobille**		8-Feb-16 A	26-Aug-16
10	**REM Mobile Functional Specification**		13-Apr-16 A	6-May-16 A
11	TEC-TR1-910270	DEL:REM Mobile Functional Specification - R1G3	13-Apr-16 A	6-May-16 A
12	**REM Mobile Build**		8-Feb-16 A	26-Aug-16
13	TEC-TR1-910330	REM Mobile Development, Build & System Testing	8-Feb-16 A	27-May-16 A
14	TEC-TR1-910380	REM Mobile SAT	24-Aug-16*	26-Aug-16
15	**Application**		18-Apr-16 A	13-Oct-16
16	**Updated Detailed Design Docs**		18-Apr-16 A	13-Oct-16
17	**Updated DTBRS**		18-Apr-16 A	10-May-16 A
18	TEC-TR1-80210	DEL: Technical Business Requirements (DTBRS) - R1G3	18-Apr-16 A	10-May-16 A
19	**Update Functional Specification**		29-Sep-16	13-Oct-16
20	TEC-TR1-911680	DEL:Review & Sign off Functional Specification - R1G3	29-Sep-16	13-Oct-16
21	**Product Gap Analysis**		15-Sep-16	28-Sep-16
22	TEC-TR1-913030	DEL:Review & Sign off Product Gap Analysis - R1G3	15-Sep-16	28-Sep-16
23	**Update RTM**		15-Sep-16	6-Oct-16
24	TEC-TR1-911840	DEL:Review & Sign off RTM - R1G3	15-Sep-16	6-Oct-16
25	**REM Configuration**		1-Jul-16 A	31-Aug-16
26	**Phase 2 - REM CONF**		1-Jul-16 A	31-Aug-16
27	TEC-TR1-40310	Update Configuration due to R1.0 Scope Review	1-Jul-16 A	31-Aug-16
28	**REM Core Product Development**		28-Apr-16 A	28-Apr-16 A
29	TEC-TR1-90720	REM Core Product Development Complete		28-Apr-16 A
30	**Test**		15-Aug-16 A	2-Dec-16
31	**SAT**		15-Aug-16 A	26-Aug-16
32	**Execution**		15-Aug-16 A	26-Aug-16
33	TEC-TR1-12010	Execute SAT Cycle 2	15-Aug-16 A	23-Aug-16
34	TEC-TR1-12000	DEL:Test Summary Report - SAT - R1G3	26-Aug-16	26-Aug-16
35	**SIT**		23-Aug-16	5-Oct-16
36	**Preparation**		23-Aug-16	23-Aug-16
37	**Objectives Matrix**		23-Aug-16	23-Aug-16
38	TEC-TR1-20350	DEL:Test Objective Matrix - SIT - R1G3	23-Aug-16	23-Aug-16
39	**Test Plan**		23-Aug-16	23-Aug-16
40	TEC-TR1-20390	DEL:Test Plan - SIT - R1G3	23-Aug-16	23-Aug-16
41	**Test Cases**		23-Aug-16	23-Aug-16
42	TEC-TR1-20430	DEL:Test Cases - SIT - R1G3	23-Aug-16	23-Aug-16
43	**Execution & Reporting**		24-Aug-16	5-Oct-16
44	TEC-TR1-12100	Shake down & Execute SIT - Cycle 1A	24-Aug-16	6-Sep-16
45	TEC-TR1-911850	Execute SIT - Cycle 2	7-Sep-16	20-Sep-16
46	TEC-TR1-911880	Final SIT TSR Delivered		5-Oct-16
47	TEC-TR1-911890	Execute SIT - Cycle 3	21-Sep-16	5-Oct-16
48	**L&P**		7-Sep-16	25-Oct-16
49	**Preparation**		7-Sep-16	21-Oct-16
50	**Objectives Matrix**		21-Sep-16	21-Sep-16
51	TEC-TR1-111170	DEL:Test Objective Matrix - Load and Performance - Approved - R1G3	21-Sep-16	21-Sep-16
52	**Test Plan**		7-Sep-16	13-Sep-16
53	TEC-TR1-111200	Test Plan Approved - L&P	7-Sep-16	13-Sep-16
54	**Test Cases**		21-Oct-16	21-Oct-16
55	TEC-TR1-111250	DEL:Test Cases - Load and Performance - R1G3	21-Oct-16	21-Oct-16
56	**Execution**		12-Oct-16	25-Oct-16
57	TEC-TR1-12020	Execute L&P	12-Oct-16	25-Oct-16
58	**UAT**		8-Sep-16	7-Nov-16
59	**Preparation**		8-Sep-16	30-Sep-16
60	**Test Plan**		8-Sep-16	8-Sep-16
61	TEC-TR1-111420	DEL:Test Plan - UAT - R1G3	8-Sep-16	8-Sep-16
62	**Objectives Matrix**		13-Sep-16	13-Sep-16
63	TEC-TR1-111370	DEL:Test Objective Matrix - UAT - R1G3	13-Sep-16	13-Sep-16
64	**Test Cases**		30-Sep-16	30-Sep-16
65	TEC-TR1-111460	DEL:Test Cases - UAT - R1G3	30-Sep-16	30-Sep-16
66	**UAT Execution**		5-Oct-16	7-Nov-16
67	**Program UAT**		5-Oct-16	7-Nov-16
68	TEC-TR1-12140	Shakedown UAT	5-Oct-16	11-Oct-16
69	TEC-TR1-12210	Program UAT Cycle 1 (3 roles) - REM 2016.1	12-Oct-16	17-Oct-16
70	TEC-TR1-12220	Program UAT Cycle 2 (All Roles) - REM 2016.1 & 2016.2	18-Oct-16	7-Nov-16
71	**Regression Testing & PVT**		14-Nov-16	2-Dec-16
72	TEC-TR1-913000	ERM Regression	14-Nov-16	25-Nov-16
73	TEC-TR1-913090	DEL:Test Summary Report Regression Testing Approved - R1G4	28-Nov-16	28-Nov-16
74	TEC-TR1-913040	PVT	28-Nov-16	2-Dec-16
75	**Security and Penetration Testing (S&P)**		6-Oct-16	2-Nov-16
76	**Preparation**		6-Oct-16	18-Oct-16
77	**Objectives Matrix**		18-Oct-16	18-Oct-16
78	TEC-TR1-911230	DEL:Test Objective Matrix - Security and Penetration - R1G3	18-Oct-16	18-Oct-16
79	**Test Plan**		6-Oct-16	12-Oct-16



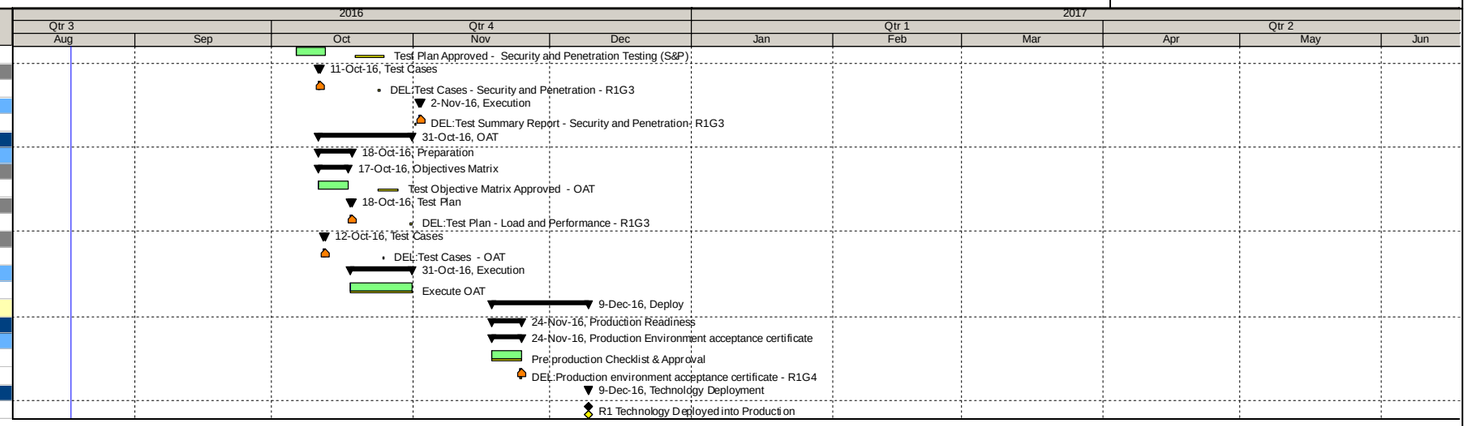
Sydney Trains ROC - MPS - Version 5.0 - Current - 19-Aug-16
Data Date: 18-Aug-16

Baseline
Remaining Work
Critical Remaining Work
Physical % Complete
Baseline Milestone
Milestone
Deliverable
Summary

Date	Revision	Checked	Approved
19-Aug-16	Version 5.0 - Draft for Discussion	EA	

Sydney Trains Rail Operations Center (ROC)
Master Program Schedule Version 5.0 - *DRAFT - Work In Progress - ROC - All Streams*

#	Activity ID	Activity Name	Start	Finish
80	TEC-TR1-911260	Test Plan Approved - Security and Penetration Testing (S&P)	6-Oct-16	12-Oct-16
81	**Test Cases**		11-Oct-16	11-Oct-16
82	TEC-TR1-911310	DEL:Test Cases - Security and Penetration - R1G3	11-Oct-16	11-Oct-16
83	**Execution**		2-Nov-16	2-Nov-16
84	TEC-TR1-911400	DEL:Test Summary Report - Security and Penetration- R1G3	2-Nov-16	2-Nov-16
85	**OAT**		11-Oct-16	31-Oct-16
86	**Preparation**		11-Oct-16	18-Oct-16
87	**Objectives Matrix**		11-Oct-16	17-Oct-16
88	TEC-TR1-911010	Test Objective Matrix Approved - OAT	11-Oct-16	17-Oct-16
89	**Test Plan**		18-Oct-16	18-Oct-16
90	TEC-TR1-911060	DEL:Test Plan - Load and Performance - R1G3	18-Oct-16	18-Oct-16
91	**Test Cases**		12-Oct-16	12-Oct-16
92	TEC-TR1-911100	DEL:Test Cases - OAT	12-Oct-16	12-Oct-16
93	**Execution**		18-Oct-16	31-Oct-16
94	TEC-TR1-911170	Execute OAT	18-Oct-16	31-Oct-16
95	**Deploy**		18-Nov-16	9-Dec-16
96	**Production Readiness**		18-Nov-16	24-Nov-16
97	**Production Environment acceptance certificate**		18-Nov-16	24-Nov-16
98	TEC-TR1-112400	Pre production Checklist & Approval	18-Nov-16	24-Nov-16
99	TEC-TR1-112409	DEL:Production environment acceptance certificate - R1G4	24-Nov-16	24-Nov-16
100	**Technology Deployment**		9-Dec-16	9-Dec-16
101	TEC-TR1-12230	R1 Technology Deployed into Production	9-Dec-16	



Baseline | Physical % Complete | Deliverable
Remaining Work | Baseline Milestone | Summary
Critical Remaining Work | Milestone

Date	Revision	Checked	Approved
19-Aug-16	Version 5.0 - Draft for Discussion	EA	

Appendix D – Risk Management Plan

The risk management plan is documented in the ROC Program PMP and has been reproduced in this PIPP document

The risk management process aims to optimise the delivery of the ROC by balancing risks and benefits with the achievement of schedule, cost and performance goals. Risk management is conducted as an ongoing process throughout the ROC Program, providing appropriate focus for specific tasks.

The program applies the Sydney Trains Enterprise Risk Management framework to the management of program risks. A Risk Management Plan (RMP) has been produced to provide details of the processes adopted by the program in the identification, analysis, planning and subsequent management of risks. This includes:

- Risk management strategies within the program team and other stakeholders as necessary;
- Responsibilities and accountabilities for managing identified program risks; and
- Risk management documentation and reporting.

A single risk register within the DRICA-SB template is used to facilitate risk management. The input and management of content into this template follows four steps in the Risk Management methodology.

Risk Identification: The risks to the achievement of the ROC objectives can be identified and raised by anyone at any time. Those risks identified must be fed into the PMO who will facilitate the risk analysis process via stakeholder consultation. The majority of risks are raised however, through the use of structured risk review workshops facilitated by a risk specialist/professional and attended by relevant stakeholders. A number of workshops have been held over the Planning Phase covering the four work streams (Technology, Infrastructure, Transformation and Change, Solution Integration) and Program Management. These have been complemented by program wide workshops, ensuring all risks have been captured, managed and allocated appropriately. The work streams monitor the status of risk treatment plans at weekly work stream status meetings. Risk workshop(s) will be conducted at regular intervals and also at significant phase points in the program, such as prior to the construction phase of the ROC facility, or the technology ECI phase. The schedule of weekly work stream risk status reviews and monthly program/phase related risk workshops will continue throughout the program life cycle.

Risk Analysis: The risks identified are analysed to understand whether they will impact the overall achievement and delivery of the proposed benefits of the ROC by looking at their causes and studying their impact and consequences.

Risk Evaluation: Risks are evaluated in accordance with the Sydney Trains Enterprise Risk Management (ERM) Framework Requirement[1] and associated Risk Assessment Guide[2] to determine whether the level of risk is acceptable or tolerable.

Risk Treatment: Following analysis and evaluation, each risk is assigned a treatment (avoided, transferred, mitigated or accepted) and an associated set of controls. The controls focus primarily on the causes and secondly on the consequences where the causes cannot be adequately addressed. The controls are assigned an owner, who may or may not be the same as the risk owner, who takes overall responsibility for the mitigation of the risk.

Risks are included in the formal program reporting governance ensuring that stakeholders are kept regularly informed of all timely and relevant risks.

The overall risk management process to be applied can be summarised in the figure below.

[1] ERM-SR-01, System Requirement, Enterprise Risk Management, Version 1.1, 20/10/11
[2] ERM-GD-003, System Guide, ERM Risk Identification and Risk Assessment Guide, Version 0.3, 14/10/10

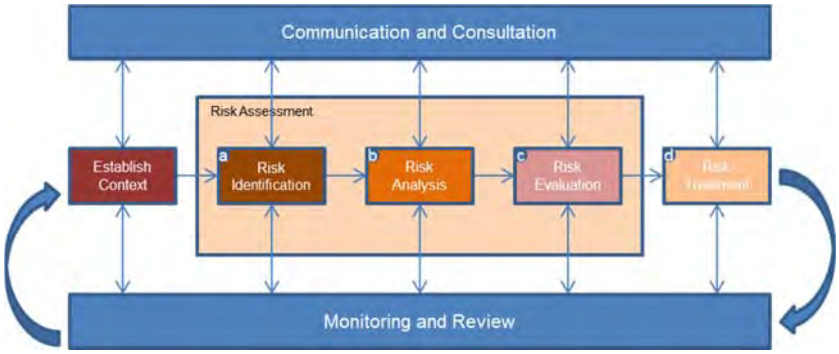


Figure: ERM risk assessment process as illustrated in AS/NZS ISO 31000:2009

Risk reviews will be carried out at a level and frequency within the program commensurate with the level of risk identified and its environment. Risks will also be assessed when there is any major change affecting, or potentially affecting the program. The below table illustrates a guideline of reviews on the ROC Program.

Risk / Issue Rating	Risk / Issue Review Frequency	Review by whom / Forum for discussion
A	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
B	Weekly / Monthly.	Weekly at a workstream meeting; Once a month at a program risk workshop facilitated by a Risk Specialist/Professional; and Once a month at a workstream risk workshop facilitated by a Risk Specialist/Professional.
C	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.
D	Monthly.	Monthly at a workstream risk workshop, facilitated by a Risk Specialist/Professional.

Table: ROC risk review schedule

Appendix E – Milestone Acceptance Form

Appendix E - Acceptance Form.doc

AJILON MILESTONE ACCEPTANCE

CLIENT NAME :	**Sydney Trains**
CONTRACT :	
PROJECT :	

Milestone Details

The following Milestones have been met under the above project:

Milestone/ Deliverable	Evidence	Date Provided/Met

The above Milestones/ Deliverables have been provided/ met :

Signature _____

Project Director _____

Date _____

On Behalf Of Ajilon Consulting Pty Ltd

Signature _____

Program Manager _____

Date _____

On Behalf Of Sydney Trains

[Ajilon Commercial use]		
Description	**Amount**	**Comments/Reference**
Client Purchase Order Value	$	
Value of Previous Claims	$	
Value of this Claim	$	Payable to Ajilon
Total Value this Claim	**$**	Payable by Sydney Trains
Balance Outstanding	$	

Appendix F – Documentation RACI

The below RACI summarises which party is accountable, responsible and consulted for each deliverable for the detailed design phase.

R: Responsible	The organisation(s) who actually provides the appropriate input or content and has responsibility for task completion but not accountability for the task. The “doer” creates or contributes to the creation of the deliverable/activity/task/objective. Responsibility can be shared.
A: Accountable	The accountable organisation is ultimately answerable to the customer for the deliverable/activity/task/objective. Only one “A” can be assigned to an action. Also known as the "Owner” of the activity.
C: Consulted	The consult role is the organisation (typically subject matter experts) to be consulted prior to a final decision or action. Provides guidance, oversight, and/or knowledge before the work can be completed and/or signed-off, i.e. “In the Loop”
I: Informed	This is the individual (s) who need to be informed and kept updated on progress, i.e. “Keep in the Picture”

The following is the RACI for Release 1:

#	Release 1 Detailed Design	Contractor	Systems Integrator	Customer
1	High Level Solution Design	R	A,R	C
2	Release 1 Architecture Specification	R	A,R	C
3	Release 1 Functional Specification	R	AR	C
4	Release 1 Non-Functional Design	R	AR	C
5	Release 1 Integration Specification	R	A,R	C
6	Project Communication Plan for Release 1	C	A,R	C
7	Release 1 Data Management Plan	R	A,R	C
8	Release 1 Data Technical Analysis Outputs	R	A,R	R
9	Release 1 Technology Implementation Strategy	R	A,R	C
10	Release 1 Technology Implementation Plan (Template)	R	A,R	C
11	Technology Test Strategy	R	A,R	C
12	Updated Project Management Plan	R	A,R	C
13	RACI	C	A,R	C
14	Updated Release 1 Product Gap Analysis	R	A	I
15	Release 1 System Test Plan	R	A,R	C
16	Requirements Traceability Matrix updated for Release 1	R	A,R	C

#	Release 1 Detailed Design	Contractor	Systems Integrator	Customer
17	Technology Environment Management Strategy	R	A,R	C
18	Operating Model	R	A,R	R
19	Draft recommended ROC organisational structure	R	A,R	R
20	Change Impact Analysis (Release 1)	R	A,R	C
21	Release 1 Training Needs Analysis	R	A,R	C

	Release 1 Updated Detailed Design	Contractor	Systems Integrator	Customer
1	High Level Solution Design	R	A,R	C
2	Release 1 Architecture Specification	R	A,R	C
4	Release 1 Non-Functional Design	R	AR	C
5	Release 1 Integration Specification	R	A,R	C
11	Technology Test Strategy	R	A,R	C
12	Project Management Plan	R	A,R	C
13	RACI	C	A,R	C
15	Technology Environment Management Strategy	C	A,R	C
16	Release 1 Data Technical Analysis Outputs	C	A,R	R
17	Release 1 Data Management Plan	R	A,R	C
18	Technology Communications Plan	C	A,R	C
20	Release 1 System Test Plan	R	A,R	C

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
1	Interface Documentation for SIRI (REM 2016.1)	A,R	C	C
2	Shadow Data Base Documentation	A,R	C	C
3	Interface Documentation for Notification Functionality (REM 2016.1)	A,R	C	C
4	Documentation of the REM 2016.1 Data Model	A,R	I	I
5	User Manual for Emergency Management Client (EMC) (REM 2016.1)	A,R	I	I
6	User Manual for Data Management Client (DMC) (REM 2016.1)	A,R	I	I
7	User Manual for Web Portal (REM 2016.1)	A,R	I	I

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
8	User Manual for REM Mobile 2016.R1	A,R	I	I
9	IMS (REM 2016.R1) Licensed Software	A,R	C	C
10	Licensed Software (REM Mobile 2016.R1)	A,R	C	C
11	System Test Summary Report (REM 2016.R1)	A,R	C	I
	REM Mobile Non-Production Deployment			
14	REM Mobile Configuration Process Documentation	A, R	C	C
15	REM Mobile Deployment Process Documentation	A,R	C	C
16	REM Mobile Hand-over to support Documentation (handover of non-production processes & procedures)	A,R	C	C
17	Update of REM Mobile Functional Specification (2016.R1)	A, R	R	I
18	Update of REM Mobile Test Objective Matrix (2016.R1)	A, R	R	I
19	Update of REM Mobile User Manual (2016.R1)	A, R	R	I
20	Update of Requirements Traceability Matrix (2016.R1)	A, R	R	I
21	Update of GAP Analysis (2016.R1)	A, R	R	I
	REM & REM Mobile 2016.R2			
22	REM System/Software Delivery (REM Release 2016.R2)	A,R	C	C
23	REM System/Software Delivery (REM Mobile 2016.R2)	A,R	C	C
24	Update of Gap Analysis (REM and REM Mobile Release 2016.R2)	R	A,R	C
25	Update of Functional Specification (REM and REM Mobile Release 2016.R2)	R	A,R	C
26	Update of Interface Documentation for SIRI (REM 2016.R2)	A,R	C	C
27	Interface Documentation for Notification Functionality (REM 2016.R2)	A,R	C	C
28	Update Documentation of the REM 2016.2 Data Model	A,R	C	C
29	Update of User Manual for Emergency Management Client (EMC) (REM 2016.R2)	A,R	C	C
30	Update of User Manual for Data Management Client (DMC) (REM 2016.R2)	A,R	C	C

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
31	Update of User Manual for REM Mobile (REM Mobile 2016.R2)	A,R	C	C
32	Update Requirements Traceability Matrix for REM 2016.R2	R	A,R	C
33	Test Summary Report for System Test (REM Release 2016.R2)	AR	I	I
34	Test Summary Report for System Test (REM Mobile 2016.R2)	AR	I	I
35	**Testing Deliverables**			
	SAT			
3	SAT Test Objective Matrix (2016.R1)	A,R	C	C
37	SAT Test Cases (2016.R1)	A,R	C	C
38	SAT Test Summary Report (2016.R1)	A,R	C	C
39	SAT Test Objective Matrix (2016.R2)	A,R	C	C
40	SAT Test Cases (2016.R2)	A,R	C	C
41	SAT Test Summary Report (2016.R2)	A,R	C	C
	System Testing for TIBCO and Other Interfaces			
42	Detailed Test Plan	C	A,R	C
43	Test Objective Matrix	C	A,R	C
44	Test Cases	C	A,R	C
45	Test Summary Report	C	A,R	C
	SIT			
46	Detailed Test Plan	C	A,R	C
47	Test Objective Matrix	C	A,R	C
48	Test Cases	C	A,R	C
49	Test Summary Report	C	A,R	C
	Load and Performance Testing			
50	Detailed Test Plan	C	A,R	C
51	Test Objective Matrix	C	A,R	C
52	Test Cases	C	A,R	C
53	Test Summary Report	C	A,R	C
	User Acceptance Testing			
54	Detailed Test Plan	C	A,R	C
55	Test Objective Matrix	C	A,R	C
56	Test Cases	C	A,R	C
57	Test Summary Report	C	A,R	C
	Operational Acceptance Testing			

#	Release 1 New Build Deliverables	Contractor	Systems Integrator	Customer
58	Detailed Test Plan	C	C	A,R
59	Test Objective Matrix	C	C	A,R
60	Test Cases	C	C	A,R
61	Test Summary Report	C	C	A,R
	Security and Penetration Testing			
62	Detailed Test Plan	C	C	A,R
63	Test Objective Matrix	C	C	A,R
64	Test Cases	C	C	A,R
65	Test Summary Report	C	C	A,R
	Cross Stream Testing			
66	Detailed Test Plan	C	C	A,R
67	Test Objective Matrix	C	C	A,R
68	Test Cases	C	C	A,R
69	Test Summary Report	C	C	A,R
	Deployment Deliverables			
70	Hand Over Plan	R	A,R	C
71	Post Implementation Verification Report	C	C	A,R
	Training			
72	Train the Trainer Training Material	A,R	I	I
73	System Administration Train Material	A,R	I	I
74	Application Administration Training Material	A,R	I	I

The following is the RACI is for Release 1 Tranche 2:

#	Release 1 T2 Deliverables	Contractor	Systems Integrator	Customer
	R1 T2 Detailed Design Deliverables			
1.	Updated Architecture Specification	R	A,R	C
2.	Updated Functional Specification	R	A,R	C
3.	Updated Requirements Traceability Matrix	R	A,R	C
4.	Updated Integration Specification	R	A,R	C
5.	Updated Product Gap Analysis	R	A,R	C
6.	Updated Interface Design Specification per Interface	C	A,R	C

#	Release 1 T2 Deliverables	Contractor	Systems Integrator	Customer
	R1 T2 Detailed Design Deliverables			
7.	Updated Non-Functional Design	R	A,R	C
8.	Interface Design Specification per Interface (Draft only, as this will be finalised in the Build Phase)	C	A,R	C
9.	Updated Data Technical Analysis Outputs	R	A,R	C
10.	RACI	C	A,R	C
11.	DP1 T2 Master Test Plan Draft	C	A,R	C

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
12	Interface Documentation for SIRI (REM 2017.2)	A,R	C	C
13	Documentation of the REM 2017.2Data Model	A,R	I	I
14	User Manual for Emergency Management Client (EMC) (REM REM 2017.2)	A,R	I	I
15	User Manual for Data Management Client (DMC) (REM REM 2017.2)	A,R	I	I
16	User Manual for Web Portal (REM REM 2017.2)	A,R	I	I
17	User Manual for REM Mobile REM 2017.2	A,R	I	I
18	IMS (REM REM 2017.2) Licensed Software	A,R	C	C
19	Licensed Software (REM Mobile REM 2017.2)	A,R	C	C
20	System Test Summary Report (REM REM 2017.2)	A,R	C	I
REM Mobile Non-Production Deployment				
21	REM Mobile Configuration Process Documentation	A,R	C	C
22	REM Mobile Deployment Process Documentation	A,R	C	C
23	REM Mobile Hand-over to support Documentation (handover of non-production processes & procedures)	A,R	C	C
24	Update of REM Mobile Functional Specification (REM 2017.2)	R	A,R	I

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
25	Update of REM Mobile Test Objective Matrix (REM 2017.2)	R	A,R	I
26	Update of REM Mobile User Manual (2017.R2)	A,R	C	I
27	Update of Requirements Traceability Matrix (2017.R2)	R	A,R	I
28	Update of GAP Analysis (2017.R2)	R	A,R	I
REM & REM Mobile 2017.R2				
29	REM System/Software Delivery (REM Release 2017.R2)	A,R	C	C
30	REM System/Software Delivery (REM Mobile 2017.R2)	A,R	C	C
31	Update of Gap Analysis (REM and REM Mobile Release 2017.R2)	R	A,R	C
32	Update of Functional Specification (REM and REM Mobile Release 2017.R2)	R	A,R	C
33	Update of Interface Documentation for SIRI (REM 2017.R2)	A,R	C	C
34	Interface Documentation for Notification Functionality (REM 2017.R2)	A,R	C	C
35	Update Documentation of the REM 2017.2 Data Model	A,R	C	C
36	Update of User Manual for Emergency Management Client (EMC) (REM 2017.R2)	A,R	C	C
37	Update of User Manual for Data Management Client (DMC) (REM 2017.R2)	A,R	C	C
38	Update of User Manual for REM Mobile (REM Mobile 2017.R2)	A,R	C	C
39	Update Requirements Traceability Matrix for REM 2017.R2	R	A,R	C
40	Test Summary Report for System Test (REM Release 2017.R2)	A,R	I	I
41	Test Summary Report for System Test (REM Mobile 2017.R2)	A,R	I	I
Testing Deliverables				
	SAT			
42	SAT Test Objective Matrix (2016.R1)	A,R	C	C
43	SAT Test Cases (2016.R1)	A,R	C	C
44	SAT Test Summary Report (2016.R1)	A,R	C	C
45	SAT Test Objective Matrix (2016.R2)	A,R	C	C

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
46	SAT Test Cases (2016.R2)	A,R	C	C
47	SAT Test Summary Report (2016.R2)	A,R	C	C
	System Testing for TIBCO and Other Interfaces			
48	Detailed Test Plan	C	A,R	C
49	Test Objective Matrix	C	A,R	C
50	Test Cases	C	A,R	C
51	Test Summary Report	C	A,R	C
	SIT			
52	Detailed Test Plan	C	A,R	C
53	Test Objective Matrix	C	A,R	C
54	Test Cases	C	A,R	C
55	Test Summary Report	C	A,R	C
	Load and Performance Testing			
56	Detailed Test Plan	C	A,R	C
57	Test Objective Matrix	C	A,R	C
58	Test Cases	C	A,R	C
59	Test Summary Report	C	A,R	C
	User Acceptance Testing			
60	Detailed Test Plan	C	A,R	C
61	Test Objective Matrix	C	A,R	C
62	Test Cases	C	A,R	C
63	Test Summary Report	C	A,R	C
	Operational Acceptance Testing			
64	Detailed Test Plan	C	C	A,R
65	Test Objective Matrix	C	C	A,R
66	Test Cases	C	C	A,R
67	Test Summary Report	C	C	A,R
	Security and Penetration Testing			
68	Detailed Test Plan	C	C	A,R
69	Test Objective Matrix	C	C	A,R
70	Test Cases	C	C	A,R
71	Test Summary Report	C	C	A,R
	Cross Stream Testing			
72	Detailed Test Plan	C	C	A,R
73	Test Objective Matrix	C	C	A,R

#	Release 1-T2 New Build Deliverables	Contractor	Systems Integrator	Customer
74	Test Cases	C	C	A,R
75	Test Summary Report	C	C	A,R
Deployment Deliverables				
76	Hand Over Plan	R	A,R	C
77	Post Implementation Verification Report	C	C	A,R
Training				
78	Train the Trainer Training Material	A,R	I	I
79	System Administration Train Material	A,R	I	I
80	Application Administration Training Material	A,R	I	I

Appendix G – Acceptance Criteria

1 Approval Criteria for Project Preparation Phase

1.1 The Approval Criteria for the Deliverables under the Project Preparation Phase are as follows:

a) the Deliverable is in a 'readable' format (both soft copy and hardcopy);

b) the Deliverable is complete, to the extent the Deliverable can be completed; and

c) there are no major Defects in the Deliverable.

2 Approval Criteria for Detailed Design (Release 1) Phase and Detailed Design (Release 1-T2) Phase

2.1 Standard List of Approval Criteria

2.1.1 The Approval Criteria for all document Deliverables are as follows:

a) the Deliverable conforms to the agreed template as agreed in the Project Preparation Phase or as agreed after the Project Preparation Phase (if applicable);

b) that all sections of the document are complete;

c) the Deliverable meets the criteria listed in the Deliverables section (sections 5.4 and 12.4 of the PIPP), where stated;

d) the Deliverable includes a summary of all relevant decisions, assumptions, dependencies, risks and issues, together with any associated action plans;

e) there are no outstanding major defects from the review of the deliverable; and

f) detailed approval criteria will be documented by the end of Week 2 of the Detailed Design Phase, following the completion of the initial Customer/ Contractor workshops.

2.1.2 The Deliverable shall be deemed fit for purpose when all criteria expressed above have been met.

2.1.3 AAD for a document that is a Deliverable occurs when that document is approved by the Customer under the "Approval of Documents" process set out in the Additional Conditions.

3 Acceptance Criteria for other Deliverables

3.1.1 The Acceptance Criteria for Deliverables other than document Deliverables are the acceptance criteria for those Deliverables as set out in the Deliverables developed in the relevant Detailed Design Phase for that Deliverable, or any other agreed criteria that may be necessary to demonstrate that the Deliverable meets the Requirements.

Appendix H – Testing Baseline

ROC-BCT-SG-0001
v2 0_ROC Program T

ROC **Program Test Management Framework**

Transport Sydney Trains

Rail Operations Centre
Program Test Management Framework

Program Management Document Control	
Project or Program	Rail Operations Centre (ROC)

ROC Program Test Management Framework

Document Ownership Information

TRIM#

Capital Register ID	3141.02

Sponsor	Howard Collins, Chief Executive	Sydney Trains

Sponsor's Delegate	TBC	Future Network Delivery Directorate
Program Director	Matt McInnes, ROC Program Director	Future Network Delivery Directorate

Document Name and Version Control

(Circulated versions only)

Document Name & Location		*ROC-BCT-SG-0001 v2.0 ROC Program Test Management Framework (Approved)*	
Version	**Date**	**Author**	**Reason for Issue / Changes Included**
v0.1	12 Dec 2014	Simon Baker	Initial draft for internal program review
V0.2	13 Jan 2015	Simon Baker	Updated with feedback from internal Program review
V1.0	15 Jan 2015	Simon Baker	Updated with feedback from Stefano Bianchini for distribution to technology vendors participating in HLSD
V1.1	27 Nov 2015	Simon Baker	Updated for internal Program review
V1.2	6 Mar 2016	Simon Baker	Updated with feedback from internal Program review and reissued for internal Program endorsement
V1.3	23 Mar 2016	Simon Baker	Version internally endorsed by the Program. Shared with external Program stakeholders for review
V2.0	15 April 2016	Simon Baker	Updated with feedback from external Program stakeholder review and reissued for external Program stakeholder endorsement

ROC Program Test Management Framework

Document Approvals, Endorsements and Distribution

Stakeholders are requested to approve/endorse this document as an agreed ROC Program Test Management Framework baseline as at ROC Release 1, Gate 2. That is, the document outlines a Test Management Framework which is appropriate for the ROC Program and upon which subsequent, more detailed test planning documentation should be based. In the event thinking in relation to the Test Management Framework changes in a material way throughout the life of the ROC Program, this document will be iterated and redistributed for review, approval/endorsement to provide an updated baseline.

Note – Resources named below are requested to share this document within their domain(s) as required. *This document may need to be socialised with new vendors engaged on the ROC Program after it has been baselined for ROC Release 1, Gate 2.*

Approvers

	Name	Position	Division/Group	Capacity	Role	Signature	Date
1	Matt McInnes	ROC Program Director	ROC Program, Customer Service Directorate	Service Provider	Approver	RE Draft ROC Program Test Manage	16 Mar 2016
2	Aram Khashabian	Business Continuity & Program Testing Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Approver	RE Draft ROC Program Test Manage	18 Mar 2016

Endorsers

	Name	Position	Division/Group	Capacity	Role	Signature	Date
3	Stuart Middleton	General Manager Network Operations	Network Operations, Operations Directorate	Stakeholder	Endorser	Re ROC Program Test Management Fra	10 June 2016
4	Paul Cassar	Control & Co-ordination Manager	Network Maintenance, Maintenance Directorate	Stakeholder	Endorser	RE ROC Program Test Management Fra	19 Apr 2016
5	Michael Mercieca	General Manager Customer Information & Intelligence	Customer Information & Intelligence, Customer Service Directorate	Stakeholder	Endorser	RE ROC Program Test Management Fra	29 Apr 2016
6	Sukanya Young	Portfolio Manager, Operations & Customer Service	Application Portfolio Delivery, Finance & Corp Services Directorate	Stakeholder	Endorser	FW ROC Program Test Management Fra	6 May 2016
7	Cathmar Campbell	Business Solutions Manager	Business Solutions & Change, Finance & Corp Services Directorate	Stakeholder	Endorser	RE ROC Program Test Management Fra	28 Apr 2016

	Name	Position	Division/Group	Capacity	Role	Signature	Date
8	Malcolm Jones	Systems Integrator, Test Manager, Ajilon	ROC Program Vendor Representative	Service Provider	Endorser	RE Draft ROC Program Test Manage	15 Mar 2016
9	Julian Molzer	REM Project Manager, Frequentis	ROC Program Vendor Representative	Service Provider	Endorser	RE Draft ROC Program Test Manage	16 Mar 2016
10	TBC	CIMS Project Manager	ROC Program Vendor Representative	Service Provider	Endorser	NA	NA
11	TBC	DTTS Project Manager	ROC Program Vendor Representative	Service Provider	Endorser	NA	NA
12	Andrew Constantinou	Solution Integration Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	RE Draft ROC Program Test Manage	18 Mar 2016
13	Charles Hanna	Transformation & Change Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	RE Draft ROC Program Test Manage	18 Mar 2016
14	Mark Pigot	Technology Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	FW Draft ROC Program Test Manage	15 Mar 2016
15	Andrew Parker	Infrastructure Program Manager, ROC Program	ROC Program, Customer Service Directorate	Service Provider	Endorser	RE Draft ROC Program Test Manage	15 Mar 2016
16	Phil Everingham	PMO Snr Project Manager, ROC Program	ROC Program, Customer Service Directorate	Stakeholder	Endorser	RE Draft ROC Program Test Manage	15 Mar 2016

Distribution

	Name	Position	Division/Group	Capacity	Role
17	Peter Savage	Portfolio Manager, Integration	Application Portfolio Delivery, Finance & Corp Services Directorate	Stakeholder	Distribution
18	Christina Phillips	Business Planning & Performance Manager	Business Planning & Performance, Operations Directorate	Stakeholder	Distribution
19	Heath Mulholland	Train Planning Manager	Operations Planning, Operations Directorate	Stakeholder	Distribution
20	Steve Chay	RMC Manager,	Network Operations, Operations Directorate	Stakeholder	Distribution
21	Carl Hill	Portfolio Manager Service Delivery Practice	Application Portfolio Delivery, Finance & Corp Services Directorate	Stakeholder	Distribution

Glossary of Terms and Abbreviations

Term/Abbreviation	Description
AEO	Authorised Engineering Organisations
ASA	Asset Standards Authority
BAFO	Best and Final Offer
BAU	Business As Usual
BCP	Business Continuity Plan
CAB	Change Approval Board
CIMS	Customer Information Management System
CMP	Configuration Management Plan
COTS	Configurable Off The Shelf
DRICA-SBA	Register of Dependencies, Risks, Issues, Changes, Actions, Scope, Benefits & Assumptions
DTP	Detailed Test Plan
DTTS	'Day of Operations' Train Timetabling System
E2E	End To End
ERM	Enterprise Release Management
HLSD	High Level Solution Design
HP ALM	HP Application Lifecycle Management
IAP	Infrastructure Assurance Plan
REM	Incident Management System
L&P	Load & Performance
NFR	Non-Functional Requirement
ONRSR	Office of the National Rail Safety Regulator
OVDS	Operational Visual Display System
PCR	Program Change Request
PCE	Phase Containment Effectiveness
PEFM	Project Execution Framework Methodology. PEFm (TfNSW) templates are used in Sydney Trains IT as the Technology layer (System Development Lifecycle) for IT projects or projects with an IT component
PIV	Post Implementation Verification
PMLC	Project Management Life Cycle. PMLC (Sydney Trains) templates must be used when seeking Capital funding approval through the establishment of business cases to analyse, justify, track and report on costs and benefits for the investment of Sydney Train projects.
Program	ROC Program
PT	Performance Testing
QAS	Quality Assurance Services
QTP	Quick Test Professional
RfP	Request for Proposal
RMP	Requirements Management Plan
RMC	Rail Management Centre
ROC	Rail Operations Centre
ROC Solution	The baseline ROC Solution Design defines the ROC Solution Scope of delivery for technology, people and process, and infrastructure to achieve the desired program outcomes and to realise the end benefits in accordance with the business and stakeholder expectations.

Term/Abbreviation	Description
RQA	Requirements Quality Assurance
SAPF	Systems Assurance & Planning Framework
SIT	System Integration Testing
SME	Subject Matter Expert
SoW	Statement of Work
ST	System Testing
T&C	Transformation & Change
Test Cycle	Test execution for a phase is divided into Test Cycles. Each Cycle of execution will have an agreed number of test cases which will be executed during the cycle within the specified duration of the phase.
TEMS	Technology Environment Management Strategy
TfNSW	Transport for NSW
TID	Technical Infrastructure Design
TOM	Test Objectives Matrix
TSR	Test Summary Report
UAT	User Acceptance Testing
UI	User Interface
UT	Unit Testing

ROC Program Test Management Framework

Table of Contents

1 Executive Summary

This document positions the ROC Program Test Management Framework within the high level context of the ROC Program:

- Solution
- Team structure
- Release Strategy
- Systems Assurance and Planning Framework (SAPF)

The ROC Program solution will include the following components:

- New technology systems, integrated with existing technologies
- New ways of working including new Business processes and organisational structure
- New infrastructure including property and operational technology systems

All these components must ultimately combine to form a ROC Solution which can be demonstrated to be safe, complete, correct and fit for purpose. While the Program has been structured into delivery streams, with this outcome in mind it follows stream deliverables should be produced in the context of the final solution from requirements, through to design, build, testing and acceptance.

The SAPF is a series of plans which outline how assurance will be applied across the ROC Program. Verification and Validation (V&V) is one of many methods by which the ROC Program will assure deliverables. Testing is a sub-set of V&V and as such is an important element of the ROC Program's overall assurance strategy.

This document outlines how ROC Program testing will be delivered and fit within the wider Program approach to V&V and the SAPF.

The ROC Program Test Management Framework reflects the ROC Program Team structure. Within streams, components of the solution should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components. This pattern will continue until stream deliverables are brought together and the solution tested as a whole.

Progressive assurance and testing will help build both the Business and Program confidence required to implement the solution into Business operations and 'go-live'.

2 Introduction

2.1 ROC Overview

The Rail Operations Centre (ROC) is a Sydney Trains led program seeking to improve management of 'day of operations' activities and improve the delivery of services for Sydney Trains, NSW Trains and their customers via the delivery of:

- Infrastructure: a new ROC building
- People: co-location of 'day of operations' functions into the ROC
- Technology: four new system capabilities
- Processes: new improved ways of working enabled by all of the above

2.2 ROC Vision

The ROC Program supports the strategy of Transport for New South Wales (TfNSW), Sydney Trains, and NSW Trains to transform the customer experience in line with their vision of "putting the customer at the heart of everything we do".

Better coordination, communication, and management will be achieved through the ROC, which will co-locate teams and transform the processes, systems, and communications for 'day of operations' functions. This co-location is expected to include computer based signalling locations, train control, security, customer information, fleet management, asset monitoring and incident response functions.

The transformation will deliver consistent, accurate, timely and up to date information to customers about delays and enable faster incident resolution and service recovery. It will provide the operational management of the Sydney Trains network with a highly coordinated customer focus and will support the realisation of benefits from future initiatives including major infrastructure programs, the Rail Futures Strategy and future business model changes.

2.3 ROC Program Delivery Structure

Given the complexity of the ROC Program a robust governance structure is required. The ROC Program has been set up with an organisational structure which aims to:

- Ensure appropriate oversight of the program's continual performance
- Enable effective and informed decision making from stakeholders outside of the delivery structure.

Program delivery has been organised into five streams, with overarching program management governance:

- Infrastructure - delivery of the physical building and its supporting infrastructure
- Technology - delivery of the four new core systems and integration into existing systems
- Transformation and Change - new ROC processes, people and organisational structures
- Solution Integration - program assurance and delivery of program benefits within acceptable risk tolerance
- Business Continuity & Program Testing - delivery of Business Continuity capability and Cross Stream Testing

The early phases of the technology program have been broken up as follows:

- High Level Design – A period of approximately five weeks commencing in early January 2015 in which two consortiums of vendor(s) worked with the ROC Program to develop parallel High Level Solution Designs (HLSD) and a BAFOs, among other deliverables

- Detailed Design – Following the parallel High Level Design Phase technology vendor(s) were down selected to participate in the Detailed Design Phase

2.4 ROC Technology Systems

The ROC 'day of operations' model will be supported by four new technology systems, integrated with each other and into the existing Sydney trains technology environment:

- 'Day of Operations' Train Timetabling System (DTTS) - Provides computerised support for monitoring services and managing service disruptions.
- Incident Management System (REM) - Provides computerised support for identification of incidents, assignment of priority, allocation of pre-planned workflows, tracking of progress, escalation and reporting.
- Customer Information Management System (CIMS) - Provides a single source of truth for customer information and the co-ordinated distribution of planned service details as well as service disruption information over multiple channels.
- Operational Visual Display System (OVDS) - Provides an integrated monitoring capability. It supports the creation of virtual walls containing the output from multiple source systems.

In addition to meeting the business needs and capabilities of the ROC, the new systems will also support international transport-based integration standards and allow for future expansion into computer based traffic management.

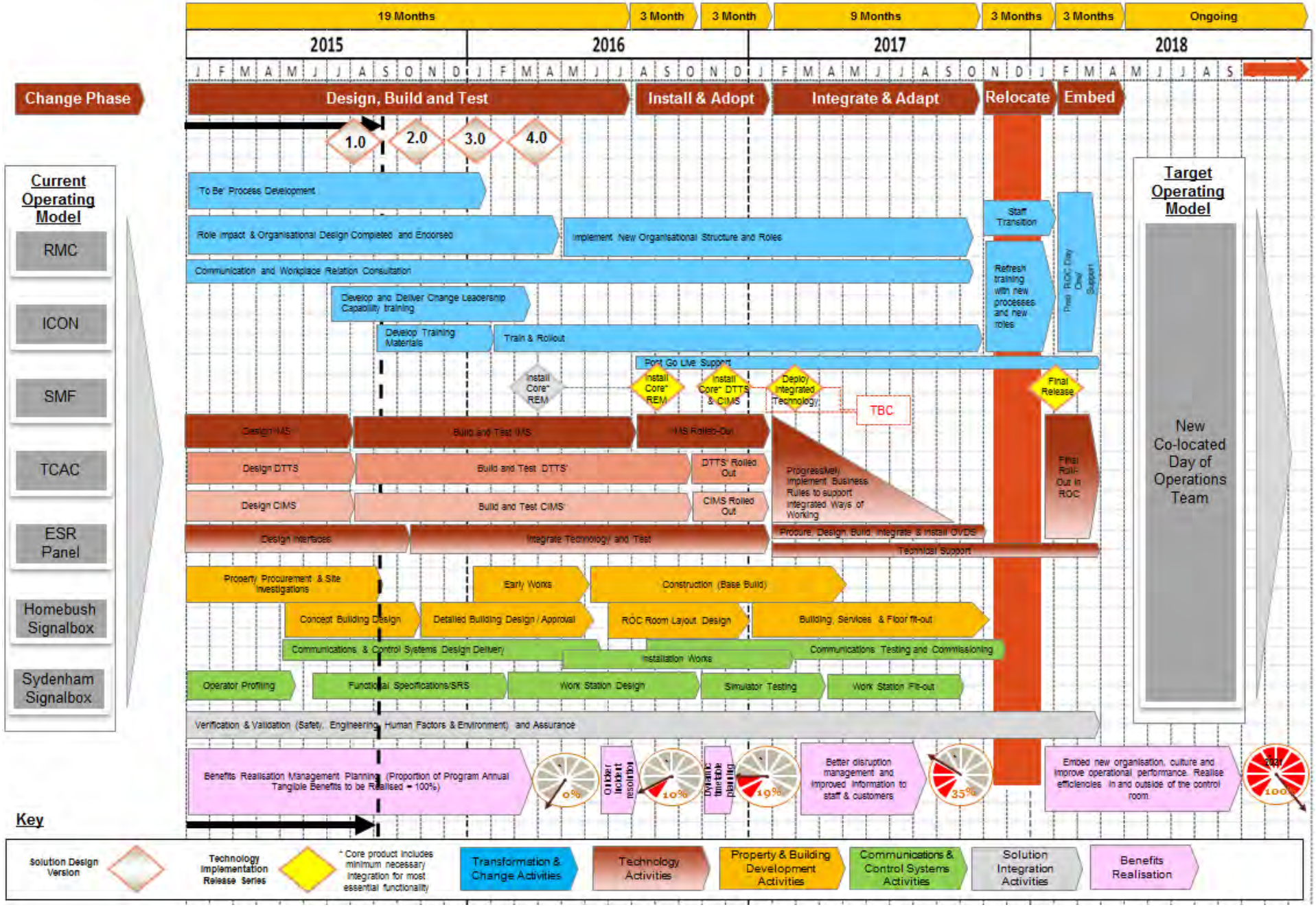
The first three of these four systems capabilities listed above are described as sub projects in the context of the ROC technology procurement process. These three sub projects and a Systems Integrator role formed the scope of the ROC Technology Request for Proposal (RfP).

2.5 ROC Program Principles

The following principles underpin the technology program design and implementation approach:

- The overarching philosophy of the technology program is to "Buy not Build" technology capability to meet the identified business needs
- New technology systems to be introduced will be 'off the shelf' to the extent that is practicable. i.e. configuration of Licensed Software, not changes to source code
- New technology business processes will be implemented as near to 'out of the box' as is practicable i.e. the existing business process will change to align with the processes that are provided with new systems
- The above principles apply provided there is no breach of regulatory requirements or internal policies
- New technologies will be implemented in a phased roll out which optimises the balance of technical risk, business benefit, the level and rate of impact on affected users
- The program will avoid a "big-bang" implementation
- The technology roll out can occur prior to the completion and transition of the business users into the new ROC facility, provided business benefits associated with the new technology can be realised

These Principles are reflected in the sample ROC Implementation Roadmap shown on the following page. The roadmap is expected to evolve over the life of the Program. An update to the roadmap will not necessarily trigger a reissue of the Program Test Management Framework.


19 Months
3 Month
3 Month
9 Months
3 Months
3 Months
Ongoing
2015
2016
2017
2018
Change Phase
Design, Build and Test
Install & Adopt
Integrate & Adapt
Relocate
Embed
1.0
2.0
3.0
4.0
Current Operating Model
RMC
ICON
SMF
TCAC
ESR Panel
Homebush Signalbox
Sydenham Signalbox
'To Be' Process Development
Role Impact & Organisational Design Completed and Endorsed
Implement New Organisational Structure and Roles
Staff Transition
Communication and Workplace Relation Consultation
Refresh training with new processes and new roles
Post ROC Day One Support
Develop and Deliver Change Leadership Capability training
Develop Training Materials
Train & Rollout
Port Go Live Support
Install Core* REM
Install Core* DTTS & CIMS
Deploy Integrated Technology
TBC
Final Release
Design IMS
Build and Test IMS
IMS Rollout
Design DTTS
Build and Test DTTS
DTTS Rolled Out
Design CIMS
Build and Test CIMS
CIMS Rolled Out
Progressively implement Business Rules to support Integrated Ways of Working
Final Roll-Out in ROC
Design Interfaces
Integrate Technology and Test
Procure, Design, Build, Integrate & Install OVDs
Technical Support
Property Procurement & Site Investigations
Early Works
Construction (Base Build)
Concept Building Design
Detailed Building Design / Approval
ROC Room Layout Design
Building, Services & Floor fit-out
Communications & Control Systems Design Delivery
Installation Works
Communications Testing and Commissioning
Operator Profiling
Functional Specifications/SRS
Work Station Design
Simulator Testing
Work Station Fit-out
Verification & Validation (Safety, Engineering, Human Factors & Environment) and Assurance
Benefits Realisation Management Planning (Proportion of Program Annual Tangible Benefits to be Realised = 100%)
0%
Driver ticket reporting
10%
Dynamic timetable planning
19%
Better disruption management and improved information to staff & customers
35%
Embed new organisation, culture and improve operational performance. Realise efficiencies in and outside of the control room
100%
Target Operating Model
New Co-located Day of Operations Team
Key
Solution Design Version
Technology Implementation Release Series
* Core product includes minimum necessary integration for most essential functionality
Transformation & Change Activities
Technology Activities
Property & Building Development Activities
Communications & Control Systems Activities
Solution Integration Activities
Benefits Realisation

2.6 ROC Program Releases

For early Program planning purposes the ROC Roadmap has the Program being delivered via four Releases:

Release	Timing	Description
Release 1	Late 2016	A new incident management system to help staff who work in supporting the moving or controlling of trains to communicate, collaborate and resolve incidents faster, providing a better service to customers. The system will facilitate the resolution of incidents in real time.
Release 2	Mid 2017	A new 'day of operations' timetabling system to support train controllers in planning to recover service from a disruption. A new customer information system to provide a single source of information for service line status and service alerts for all customer and staff channels, including mobile apps, websites, Station Passenger Information screens and Variable Message Screens.
Release 3	Late 2017	Incident management, timetable changes and customer information is fully integrated with existing systems and alerts. Incidents and timetable changes are linked to customer information providing real time information.
Release 4	First Half 2018	Progressively move business functions into new ROC building.

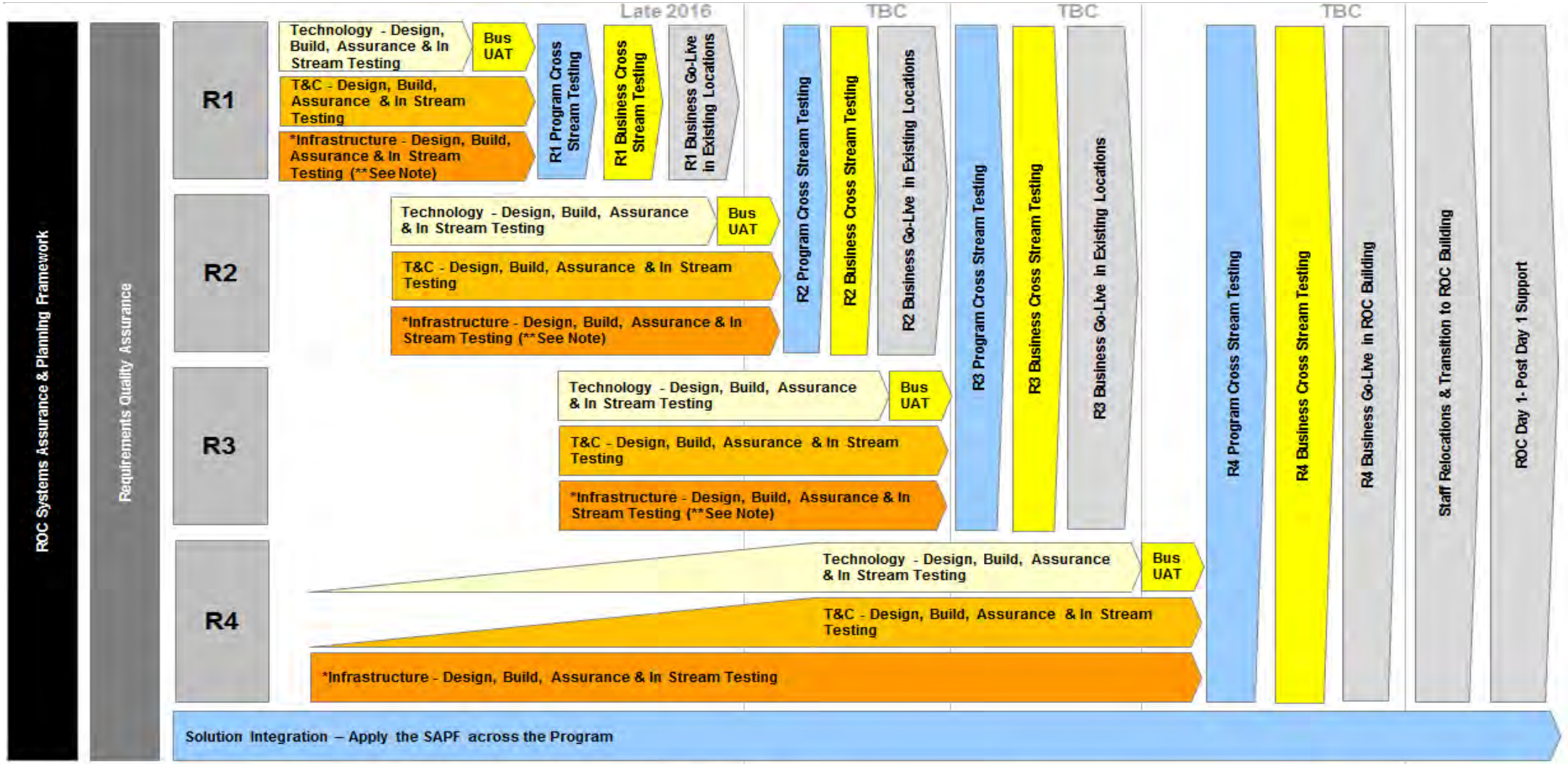
2.7 ROC Program Test Principles

To support the ROC Program principles, wherever possible the following test principles will be applied throughout the Program:

- ROC Testing should align to Program Schedule milestones and support the Program Implementation Strategy
- Solution components should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components
- Where solution components derived from requirements are tested, traceability of tests to requirements and test coverage of requirements should both be demonstrable
- Test phases will build on previous test phases to help assure the final solution delivered is safe, complete, correct and fit for purpose
- A risk based approach will be applied to testing. Test cases should be prioritised into essential, high, medium and low based on risk and be executed in priority order so far as it is feasible to do so
- For applicable test phases, Program testing should occur prior to business testing. Benefits of this approach include:
    - Using professional testers to identify defects prior to business testing will reduce business resource 'testing fatigue'
    - Build Program confidence prior to business exposure
    - Duration and iterations of business testing should be reduced
    - Business resources initial experience is positive
    - Positive word of mouth from Business testers back to their teams
- Any elements of the ROC solution(s) which are to be implemented into current operating locations should be 'Cross-Stream' tested to demonstrate the ROC solution including technology, processes, roles and infrastructure is safe, complete, correct and fit for purpose prior to implementation into business operations
- The ROC solution including technology, processes, roles and infrastructure should be 'Cross-Stream' tested from the new ROC building to demonstrate the solution is safe, complete, correct and fit for purpose prior to day one of operations
- Testing for each Release will conclude at the completion of Cross-Stream testing
- Any Business readiness activities conducted after Cross-Stream testing are not test phases. The intent of these activities will be to confirm business readiness rather than identify and resolve defects
- Program testing should include an approach to monitor and log variances in technology network performance between different sites (RMC, ICON, SMF, ROC Technology Test Lab, Belmore, ROC Building and Signal Boxes) which may adversely impact operational performance
- Test delivery should be planned so as to not compromise the organisation's ability to manage the 'day of operations'

These Principles should be applied to all major and minor releases delivered by the ROC Program as appropriate, are reflected in the ROC Program Test Management Framework Overview Diagram shown below and are referenced throughout this document.

ROC Program Test Management Framework



Stream deliverables to be designed, built, assured and/or tested include but may not be limited to:

Technology
- IMS
- DTTS
- CIMS
- OVDS
- Existing Application Changes
- Integration
- DR

Transformation & Change
- Current Processes
- Future Processes
- Interim/DR Processes
- IR/OD Strategy
- Role Definitions
- Workload Baselining & Assessment
- Procedures
- Work Instructions
- SME Training Dev & Delivery
- End User Technical Training Dev & Delivery
- End User Behavioural Training Dev & Delivery

Infrastructure
- Property
- Control Room Floor
- Support Spaces
- Facilities
- Control Systems
- Services
- Utilities
- DR

* In Stream Infrastructure testing will comply with Australian Standards, Sydney Trains &/or TfNSW Engineering specifications & processes in order to achieve required certification and /or regulatory compliance.
**Note – It remains to be seen whether the Infrastructure stream will deliver any solution components for R1, R2 or R3.

Business Continuity & Program Testing
- Program Test Management Framework
- Program BCP Strategy

Solution Integration
- Program Roadmap
- Program Safety Change Plan
- Program Requirements Integration Plan
- Program Integrated Configuration Plan
- Program Quality Assurance Plan

Note – Dates are based on draft v3 of the Program Roadmap, which may be subject to change

2.8 Stakeholder Resource Involvement

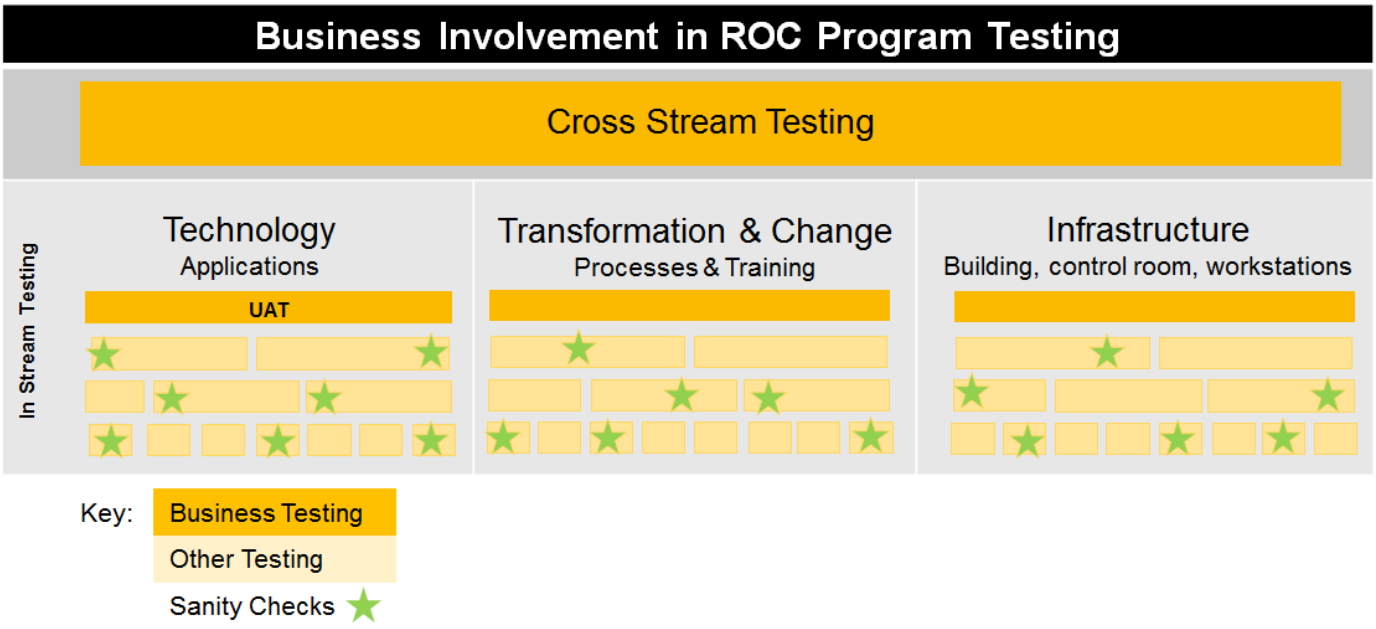
The testing of ROC Program solution components is expected to occur in layers in line with the ROC Program test principle restated below:

- Solution components should be tested as early as possible and in isolation if possible, allowing subsequent testing to focus on the interface, integration and interaction of previously tested components

From a testing perspective it is anticipated stakeholders will be involved in a number of ways including:

- Review and approval of Test Planning documentation and artefacts
- Informal engagement and involvement in sanity checking the proposed solution throughout design, build and testing
- Formal participation in User Acceptance Testing
- Formal participation in Cross Stream Testing

This participation is illustrated in the diagram below:



3 Background

3.1 ROC Program Systems Engineering Approach

The scope and complexity of the ROC Program creates a broad range of conditions and contexts each ROC stream will operate within. The Program has adopted a systems engineering approach to address this challenge, with each delivery stream applying lower level methodologies as appropriate:

- The Infrastructure stream has adopted a systems engineering framework.
- The Technology stream utilises a systems architecture based practice (PEFM), however this methodology is domain specific and additional linking concepts have had to be established to enable traceability between Technology systems architecture and other streams.
- The Transformation and Change and Program Management Office requirement sets are not typically expressed in architectural terms. To manage this disconnect, new concepts and interfaces have been established to represent the artefacts produced in these streams within an architectural framework that is compatible with their respective methodologies.

The overarching systems engineering approach will assure the validity and quality of the total ROC Solution and is currently reflected in:

- The ROC Component Model
- The ROC Service Delivery Design Blueprint
- The ROC Systems Assurance and Planning Framework

3.2 The ROC Component Model

The ROC solution can be thought of as an integrated set of components being developed and delivered by streams of the ROC Program. The solution, along with interfaces and dependencies between components are described within the ROC Solution Design.

As streams develop components of the solution they will maintain consistency with the broader ROC Solution by ensuring components accurately cross reference any dependent components from within their own stream or another stream.

The ROC Component Model is represented by Figure 1 on the following page and described in more detail within the ROC Service Delivery Design Blueprint.

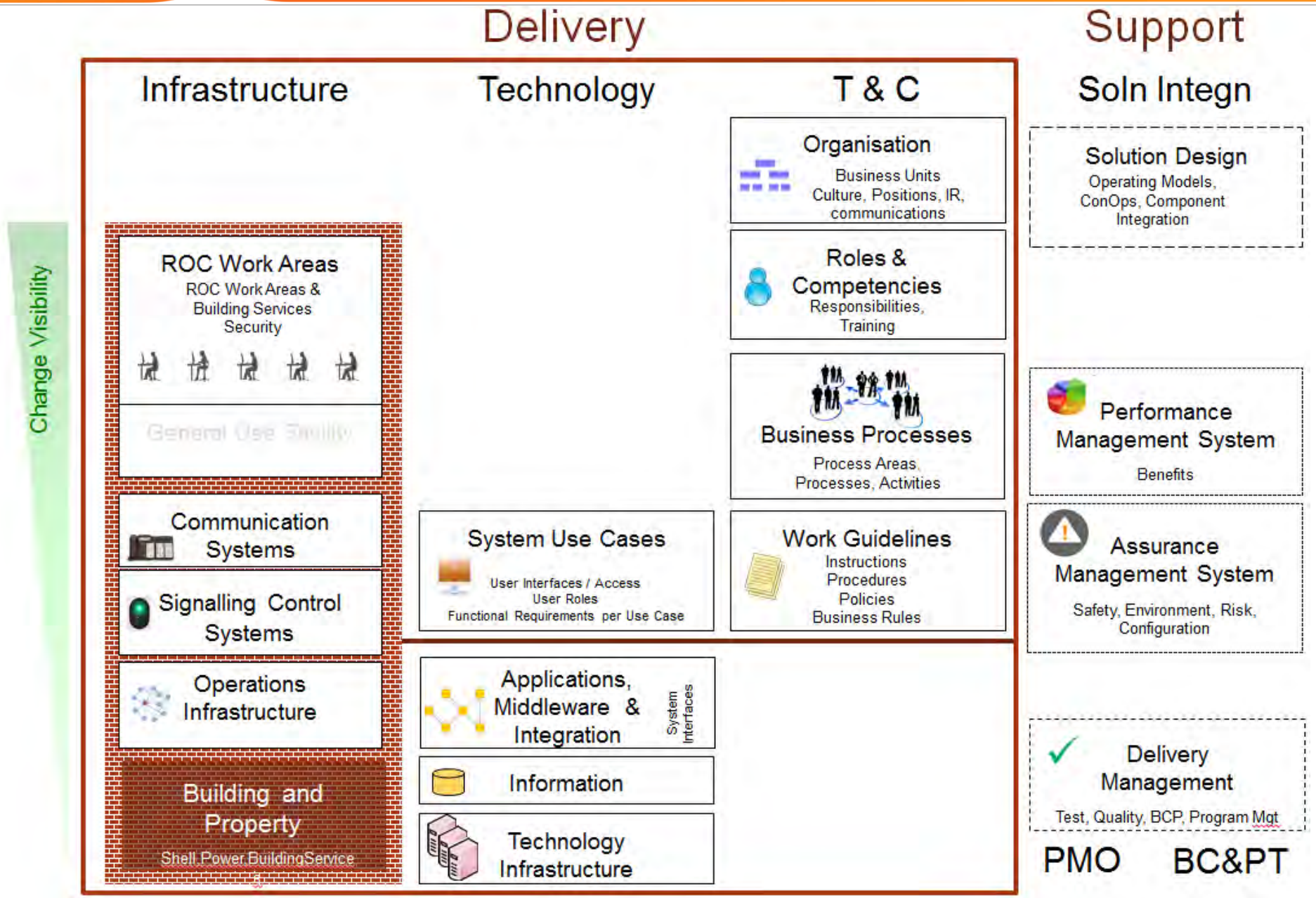

Delivery
Support
Infrastructure
Technology
T & C
Soln Integn
Change Visibility
ROC Work Areas
ROC Work Areas & Building Services Security
General Use Facility
Communication Systems
Signalling Control Systems
Operations Infrastructure
Building and Property
Shell,Power,BuildingService
Organisation
Business Units
Culture, Positions, IR, communications
Roles & Competencies
Responsibilities, Training
Business Processes
Process Areas, Processes, Activities
System Use Cases
User Interfaces / Access
User Roles
Functional Requirements per Use Case
Work Guidelines
Instructions
Procedures
Policies
Business Rules
Applications, Middleware & Integration
System Interfaces
Information
Technology Infrastructure
Solution Design
Operating Models, ConOps, Component Integration
Performance Management System
Benefits
Assurance Management System
Safety, Environment, Risk, Configuration
Delivery Management
Test, Quality, BCP, Program Mgt
PMO
BC&PT

Figure 1

3.3 The ROC Service Delivery Design Blueprint

The ROC Service Delivery Design Blueprint will define a detailed logical design of the targeted solution and end state.

It establishes a holistic architecture which includes references to the types of requirements and deliverables/components of each program stream, as well as the relationships and interfaces between them.

The blueprint can be used to logically test the end to end traceability and completeness of the ROC Solution. It provides assurance components both satisfy stream requirements and also support the integrity of the ROC Program Solution as a whole. The tool allows the ROC Program to monitor key dependencies and align program activities. The blueprint includes:

- Organisational structure - roles, positions, responsibilities, accountabilities, competencies and training
- Decision support requirements - system use cases, end user acceptance testing, overall fitness for purpose
- Infrastructure - control systems and facilities design
- Stakeholder communication and governance
- Compliance and safety, legislation, policy, procedures and work instructions
- Benefits realisation

Another key benefit of this holistic architecture is that it can enable logical testing of a range of different future state scenarios (e.g. performers playing new roles, using new business processes and systems, operating from new facilities).

The service delivery design blueprint may evolve throughout the Program lifecycle. The current version is represented by Figure 2 on the following page.

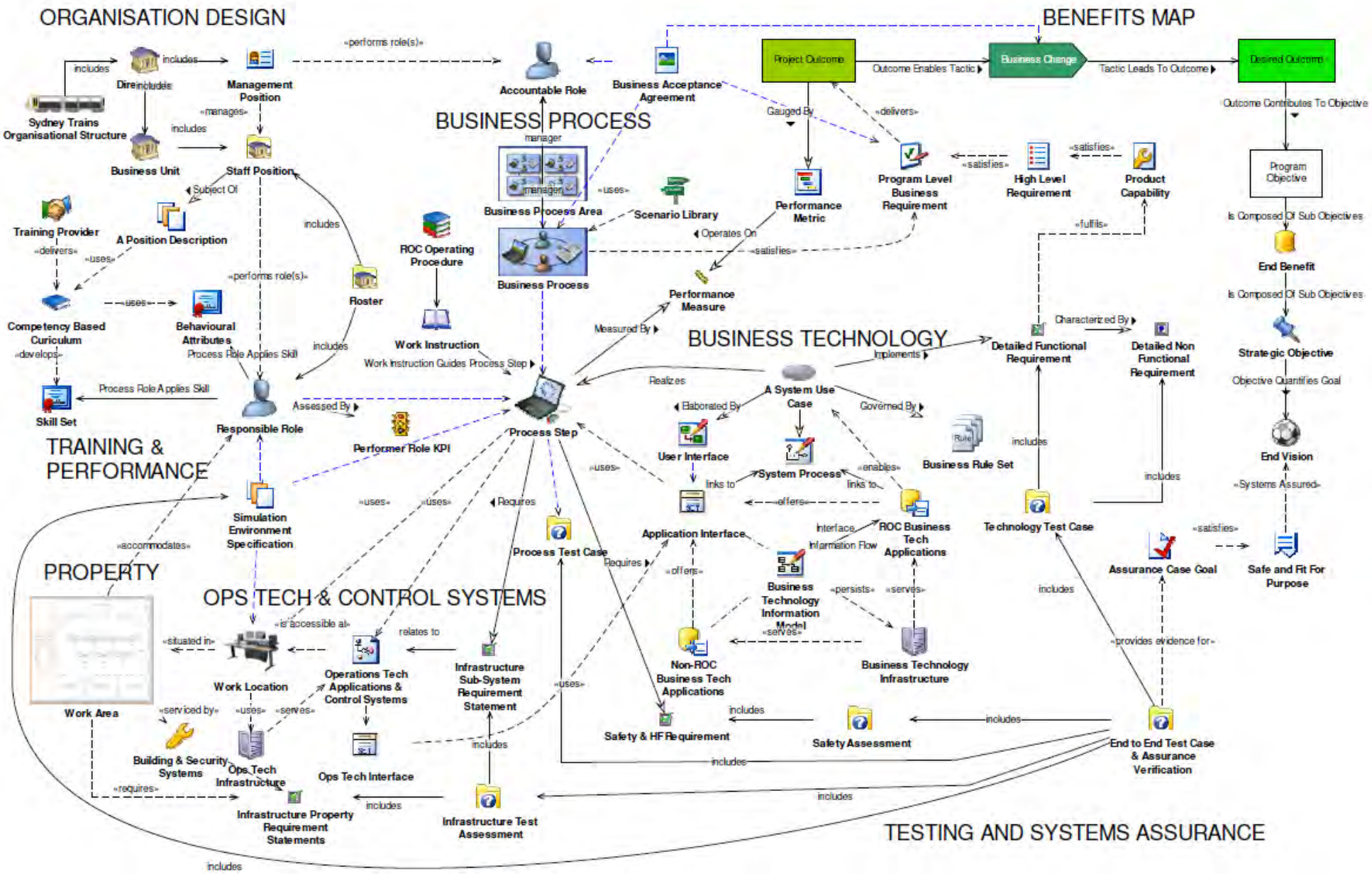

ORGANISATION DESIGN
BENEFITS MAP
BUSINESS PROCESS
BUSINESS TECHNOLOGY
TRAINING & PERFORMANCE
PROPERTY
OPS TECH & CONTROL SYSTEMS
TESTING AND SYSTEMS ASSURANCE
Sydney Trains Organisational Structure
Business Unit
Management Position
Staff Position
A Position Description
Subject Of
Training Provider
Competency Based Curiculum
Behavioural Attributes
Skill Set
Process Role Applies Skill
Responsible Role
Roster
Work Instruction
Work Instruction Guides Process Step
ROC Operating Procedure
Accountable Role
Business Acceptance Agreement
Business Process Area
Business Process
Scenario Library
Performance Metric
Performance Measure
Measured By
Operates On
Process Step
Performer Role KPI
Assessed By
Project Outcome
Outcome Enables Tactic
Business Change
Tactic Leads To Outcome
Desired Outcome
Outcome Contributes To Objective
Program Objective
Program Level Business Requirement
High Level Requirement
Product Capability
End Benefit
Strategic Objective
End Vision
Objective Quantifies Goal
Systems Assured
Detailed Functional Requirement
Detailed Non Functional Requirement
Characterized By
A System Use Case
Realizes
Implements
Elaborated By
Governed By
User Interface
System Process
Business Rule Set
Application Interface
ROC Business Tech Applications
Technology Test Case
Assurance Case Goal
Safe and Fit For Purpose
Simulation Environment Specification
Process Test Case
Work Location
Work Area
Operations Tech Applications & Control Systems
Infrastructure Sub-System Requirement Statement
Non-ROC Business Tech Applications
Business Technology Information Model
Business Technology Infrastructure
Safety & HF Requirement
Safety Assessment
End to End Test Case & Assurance Verification
Building & Security Systems
Ops Tech Infrastructure
Ops Tech Interface
Infrastructure Property Requirement Statements
Infrastructure Test Assessment
includes
uses
performs role(s)
manages
delivers
satisfies
fulfils
Is Composed Of Sub Objectives
develops
accommodates
requires
Requires
offers
enables
persists
serves
is accessible at
situated in
serviced by
relates to
provides evidence for
Interface
Information Flow
links to

Figure 2

3.4 The ROC Systems Assurance and Planning Framework

While the ROC Service Delivery Design Blueprint gives the Program a detailed conceptual picture of the overall solution and targeted end state, the ROC Systems Assurance and Planning Framework (SAPF) informs the Program as to how the blueprint will be implemented.

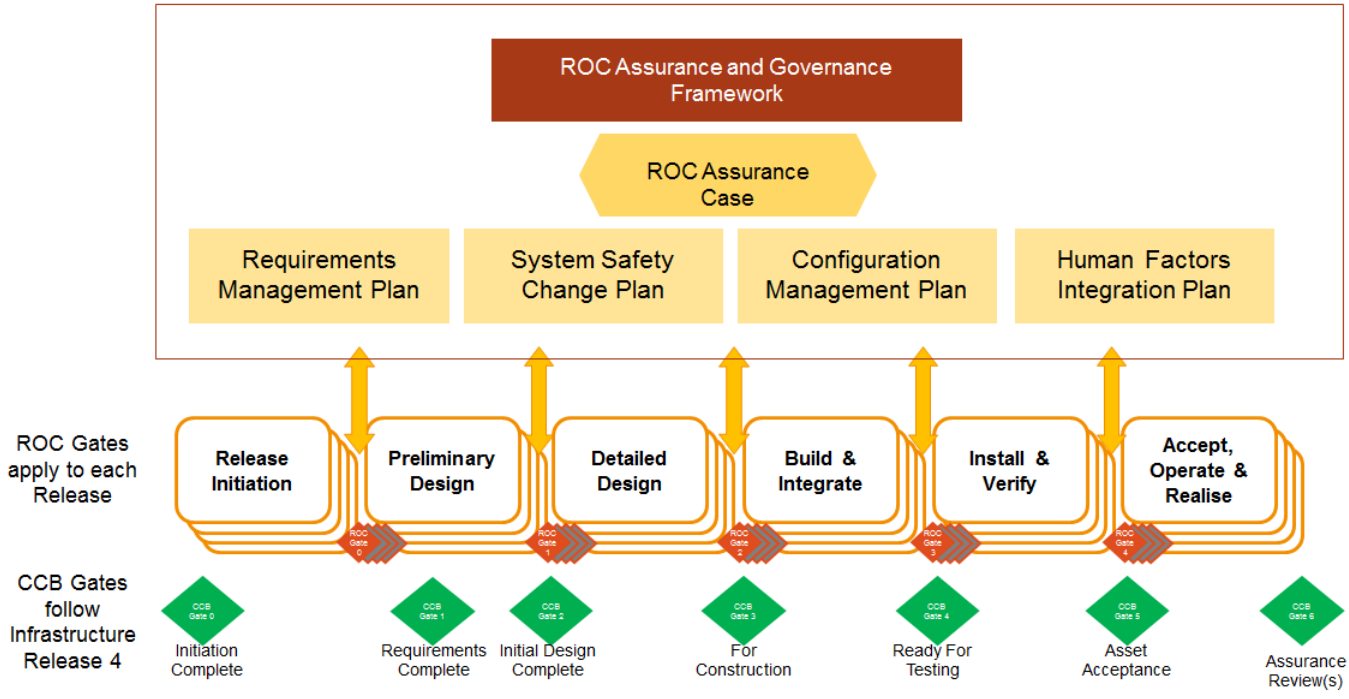
The SAPF is made up of a number of plans including:

- Assurance & Governance Plan
- Requirements Management Plan (RMP)
- Configuration Management Plan (CMP)
- System Safety (Safety Change) Plan
- Human Factors Integration Plan

The SAPF will provide the framework around systems assurance and planning for the ROC Program, helping ensure delivery of the blueprint is compatible with the needs of Program requirements traceability management.

The framework may also include any other plans which will enable the ROC Program to demonstrate assurance to governance bodies and acceptance authorities. Two additional documents which will be produced to supplement the SAPF are the ROC Program Verification & Validation Plan and the ROC Program Test Management Framework (this document).

A conceptual diagram which represents the current, agreed version of the SAPF is presented below.



3.5 ROC Program Phases and Gates

To deliver an integrated Program the ROC will need to blend traditional program management approaches with the following assurance approaches:

- Transport ASA CMAAC gates for Asset Integrity
- Sydney Trains Engineering and System Integrity CCB Hierarchy
- PMLC / PEFM
- Finance Approvals Process
- Managing Successful Programs / Prince2
- The Open Group architecture development method (TOGAF)
- Defence Capability Development (MODAF,DODAF,AUSDAF)

The ROC Program is proposing a set of consistent Phases and Gates which align with external compliance gates as outlined in the diagram below:

Program Delivery Phases & Indicative Deliverables

Program Establishment	Business Case, Business Requirements Specification, Concept of Operations, Current/Future Processes L1-3, Business Changes, Benefits [CMAAC 0]
Program Initiation	System Capabilities (High Level Requirements), Infrastructure SRS, Major System Option Evaluations (vendor qualification), Infrastructure Options, Roadmap / Release Strategy, Systems Assurance Plan, Assurance Case, Current Processes L1-4 [CMAAC 1]

Per Release

Release Initiation	Establish Release Strategy, High Level Scope and Assumptions, Establish Release Working Group
ROC Gate 0	
Preliminary Design	Release specific scope: business requirements (in scope), high level requirements (in scope), IT architecture design, current processes in scope, organisation, infrastructure elements, assurance case level 1-3 Design: Future state process patterns, organisation design principles Detailed design plans for all detail design artefacts
ROC Gate 1	
Detailed Design	Developing detailed requirements & design to build: functional reqs, system use cases, interfaces, architectures, sub system SRS, architect designs, future state process level 4, org design & change plan, role definitions, positions, competencies, test scenarios, assurance case L4, assurance scenarios Detailed plans for all Build & Integrate artefacts including training plan, test plan…
ROC Gate 2	
Build & Integrate	Build and integrate systems, build human performance capability, build facilities Position definitions, establishment, IR, Procedure writing, Provide training to build competency, Workflow config, Unit, System, Integrated, test Detailed plans for all Install & Verify artefacts including E2E test verification, safety assurance verification…
ROC Gate 3	
Install & Verify	Capabilities are available in the live environment (including DR and BCP) but are not in use Final verification and assurance, acceptance by external compliance stakeholders
ROC Gate 4	
Accept, Operate & Realise	Business accepts into service, operational usage commences - people performing new jobs, major systems being used, hand off to BAU, cumulative performance and benefits tracking

Program Close	Conclude benefits tracking, full BAU hand over for operations and maintenance

3.6 ROC Program Verification & Validation

Verification and Validation (V&V) will be applied across a number of ROC Program deliverables. In the context of the SAPF and the ROC Program V&V Plan, there will be many methods by which the Program will assure the quality of deliverables including:

- Documentation review and sign off
- Engineering certification
- Regulatory and legislative compliance
- Various types of testing and test phases
- Combinations of the assurance methods listed above

In the context of the wider Systems Engineering approach, ROC Program testing will be one method by which the Program will:

- Assure the solution and end state delivered are safe, complete, correct and fit for purpose
- Assure Sydney Trains is adequately prepared for the implementation of the solution (or elements of the solution) into business operations

The focus of the ROC Program Test Management Framework is the sub-set of Program deliverables which will be assured by testing.

The ROC Program V&V Plan will:

- Reflect the stream deliverables to be assured in line with the SAPF
- Propose the method by which each deliverable will be assured

Just as the SAPF overarches the ROC Program V&V Plan, the Program Test Management Framework overarches In-Stream and Cross-Stream testing. Where a deliverable is to be assured by testing, it is expected the types of test planning documentation illustrated in the table below will be produced.

ROC System Assurance & Planning Framework		
ROC Program Verification & Validation Plan		
ROC Program Test Management Framework		
Technology Test Strategy	At the time of writing no T&C deliverables have been identified which will be assured by in-stream testing	Infrastructure Test Strategy
Technology Release Test Plans		Infrastructure Sub-Stream Test Plans
Technology Detailed Test Plans		Infrastructure Detailed Test Plans
Technology Test Summary Reports		Infrastructure Test Results
Technology Test Artefacts		Infrastructure Test Artefacts
Cross Stream Test Strategy		
Cross Stream Detailed Test Plans		
Cross Stream Test Summary Reports		
Cross Stream Test Artefacts		

3.7 Test Documentation and Artefact Deliverables

Further to this Program Test Management Framework, for deliverables which will be assured by testing it is expected the following types of documentation and artefacts may be produced:

Deliverable	Deliverable Description	Deliverable Type & Approval Method
Test Strategy	Test Strategy documents apply to the Program and should align to the Program Test Management Framework. The strategy details the overall testing scope, approach, tools, environments, test management procedures, metrics, roles, responsibilities and schedule for test phases to be delivered by each stream. These elements should combine to outline a test strategy which will provide objective evidence the new or changed service meets stakeholder requirements.	Document - Review & Approval
Master Test Plan (MTP)	Master Test Plans apply to a Release and should align to the Program Test Management Framework and the Test Strategy. For each Release the Master Test Plan details the testing scope, approach, tools, environments, metrics, roles, responsibilities and schedule for test phases to be delivered by each stream.	Document - Review & Approval
Detailed Test Plans (DTP)	DTP's should be produced for each test phase and align to the Test Strategy and Master Test Plan. They provide details around the schedule, scope, approach and technical considerations. The DTP identifies resource requirements, communicates roles and responsibilities and articulates the time frames tasks need to be performed within. Any deviation from the Test Strategy or MTP should be highlighted in the DTP.	Document - Review & Approval
Test Objectives Matrix (TOM)	Test objectives can be derived from the business, functional and/or system requirements depending on the test phase. Test Objectives must be mapped to Requirements Traceability Matrix (RTM) for traceability and to demonstrate coverage of requirements. The Test objectives describe "what is to be tested".	Document - Review & Approval
Test Cases	The scenarios to be executed during testing. Test cases are derived from and should cover of the test objectives, including both positive and negative scenarios. Test cases include details around 'how' the testing will be executed in order to meet the test objective(s). They should be written at a level that takes into account the experience of the tester and the risk level of the test. Existing artefacts should be leveraged wherever possible when preparing test cases.	Document - Review & Approval
Test Results	Specific test results, like screenshots, application reports & logs required in order to verify the execution outcome of a test case. Test results will be produced for each test case executed and be stored in HP ALM, including pass/fail status.	Artefact – Approved via Review & Approval of the TSR
Defects	Each defect identified during testing will be documented in the HP ALM defect Management system, where progress and resolution will be tracked.	Artefact – Approved via Review & Approval of the TSR
Periodic Status Reports	Regular reports which outline test status, progress, major issues, resource issues and any schedule impacts. The test statistics and analysis support daily management and evaluation of test status and corrective action where required in order to meet milestone delivery dates.	Artefact –Review & Approval not required
Test Summary Report (TSR)	A report produced at the conclusion of a test phase to summarise test results measured against the test exit criteria for the test phase.	Document - Review & Approval
Automation Test Suites	Suite(s) of automation test scripts. Creation commences during System Integration Testing for reuse in subsequent integration test phases	Artefact – Approved via Review & Approval

4 Document Information

4.1 Document Evolution

In January 2015 representatives from within the ROC Program agreed an interim version of this document (v1.0) was fit to inform technology vendor(s) participating in the High Level Design Phase of the Program. It provided an early, high level view of the test framework which will be applied to the ROC Program. Vendor(s) required a clear understanding of their responsibilities in relation to testing in order to produce a Best and Final Offer (BAFO) early in 2015. The BAFO was one of a number of deliverables vendor(s) produced during High Level Design and was an important input in the context of Sydney Trains technology vendor evaluation and selection criteria.

This next iteration has been produced to:

- Reflect the evolution in thinking related to the Program Test Management Framework between January 2015 and January 2016
- Align with ROC Release 1, Gate 2 deliverables
- For internal and external Program stakeholder review and approval to provide an agreed Program baseline

This document may need to be updated within the lifecycle of the ROC Program if thinking around the Program Test Management Framework evolves in a material way. An outline of the evolution the document has been through and may go through in the future is outlined below:

- V0.1 – First draft internally reviewed by the ROC Program team
- V1.0 – Document updated with feedback from the review of v0.1. Agreed interim version was issued to inform technology vendors at the commencement of the program High Level Design Phase
- V1.1 – Document updated for Release 1, Gate 2 milestone and internally reviewed by the ROC Program team
- V1.2 - Document updated with feedback from the review of v1.1 and distributed for internal Program endorsement
- V1.3 - Document distributed for external stakeholder review
- V2.0 – Document updated with feedback from external stakeholder review and distributed for endorsement/approval by internal and external Program stakeholders to provide an agreed baseline

This approved baseline would then be subject to change control. If thinking around the Program Test Management Framework evolves in a material way as the program moves through the Design and Delivery Phases, further iterations of this document may be produced for review and approval.

If updates are required, a new version of the document will be formally issued to stakeholders both internal and external to the ROC Program for review and feedback. The document would then be updated based on feedback from the review and reissued for formal sign off to provide a new agreed baseline. At any point in time the approved ROC Program Test Management Framework should serve as a reference for subsequent, more detailed testing documentation which will be produced by the Program.

4.2 Document Purpose

This document provides a high level view of the in-stream testing to be performed within each Program delivery stream. It also outlines how these tested components will be brought together for cross-stream testing to verify the E2E ROC solution at a Program level.

Producing the second iteration of this document for the Release 1, Gate 2 milestone limits the level of detail which can be included as the following types of information may not be fully defined:

- Implementation and Support Contracts with selected technology vendor(s)
- Outputs of the Program Detailed Design phase(s)
- Data Architecture
- ROC Program BCP Strategy
- Program Implementation Plans and Release Management Strategy
- Program Test Environment Management Plan

Despite these limitations, there are a number of benefits in developing a second iteration of the Program Test Management Framework for Release 1, Gate 2 including:

- Providing Program stakeholders with an early, high level view of how ROC Program components will be tested in order to gain high level agreement around the Program Test Management Framework
- Establish an agreed framework around test approach, language and guidelines upon which subsequent, more detailed testing documentation will be based
- Define test management and governance procedures and controls for the ROC Program

Given the different disciplines in play across the ROC Program it is unlikely a ‘one size fits all’ approach to testing will be appropriate. It is not the intention of this document to be prescriptive or mandate a specific approach across the entire Program. This framework should be applied to Program Testing where it is appropriate to do so. Accepted approaches from different domains and disciplines can be integrated into this framework as required.

Note - In the event of any inconsistencies between this document and the contract(s) with Program vendor(s), the terms of the contract(s) shall prevail to the extent of the inconsistency.

4.3 Document Scope

This document will provide a high level view of the testing required in order to gain acceptance to implement Releases of the ROC Program solution into Business operations.

Required activities which occur as part of the implementation/deployment process or post operational go-live will be within the scope of the ROC Program, but outside the scope of this document. Examples include:

- Post Implementation Verification (PIV) is an activity undertaken as a step in the Production Implementation Plan to verify technology system(s) have been successfully deployed to the Production environment, are ready for business operations to ‘go-live’ and deployment roll back is not required. PIV will be detailed within implementation documentation
- Handover and acceptance of technology application maintenance and support to Team(s) within Sydney Trains

4.4 Intended Audience

The ROC Program Test Management Framework has a broad audience including:

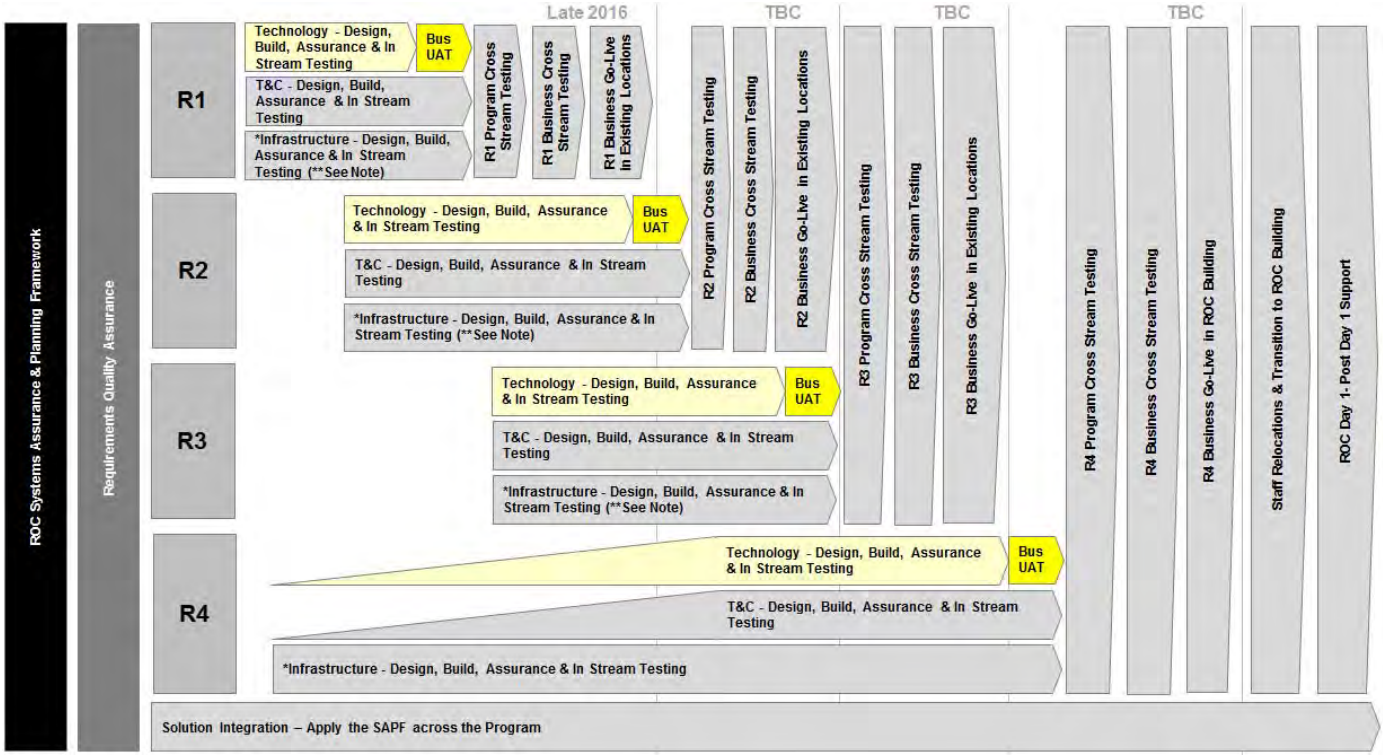
- The ROC Program Team
- ROC Program vendor(s)
- Impacted areas and stakeholders within Sydney Trains
- Impacted areas and stakeholders outside Sydney Trains
- Interdependent Programs

This audience and their respective roles and responsibilities are outlined in the 'Document Approvals, Endorsement and Distribution' section of this document.

5 In-Stream Technology Testing

In-stream testing refers to the testing performed on the solution components of a single ROC Program delivery stream.

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Technology testing refers to the areas indicated below:



The ROC Technology Stream went to market with an RfP to deliver four sub-projects:

- SP1 – Day of Operations Train Timetabling System (DTTS)
- SP2 – Incident Management System (REM)
- SP3 – Customer Information Management System (CIMS)
- SP4 – Systems Integrator

In addition, the Technology Stream will also deliver:

- Operational Visual Display System (OVDS)
- Changes to existing Sydney Trains applications

Some of the Systems Integrator early documentation deliverables include:

- ROC Technology Test Strategy - An overview of the testing which will be applied to new technology systems and changes to existing systems, including the quality target metrics technology deliverables will be measured against.
- ROC Technology Environment Management Strategy (TEMS) - The non-Production environments required to support the Test Strategy and deliver the Program, including how the environments are to be managed.
- System Test Plans - Testing which is to be applied to new technology systems and changes to existing systems up to and including System Acceptance Testing.

For early Program planning purposes the ROC Roadmap has the Program being delivered via four Releases. It is anticipated each technology system/change delivered will progress through the test phases listed below, which are detailed further within Appendix B of this document.

- Shakedown Testing
- Unit Testing (UT)
- System Testing (ST)
- System Acceptance Testing (SAT)
- System Integration Testing (SIT)
- Load & Performance Testing (L&P)
- Security & Penetration Testing (S&P)
- Automated Regression Testing
- Program User Acceptance Testing
- Business User Acceptance Testing

To ensure the integrity of component being tested, in conjunction with each test phase it is also expected an appropriate level of regression testing will be performed.

This approach will need to be ratified during the program Detailed Design Phase(s), then reflected in the ROC Technology Test Strategy document and subsequent Technology test planning documentation and artefacts.

The ROC Program will seek to produce consistent technology testing related documentation deliverables, particularly when these deliverables are to be reviewed by stakeholders outside of the Program. Sydney Trains/ROC Program templates should be used as a benchmark, be modified as little as possible and by mutual agreement.

Technology In-Stream testing and assurance will include formal business acceptance of Technology Stream components. On a Release by Release basis, assured technology components will be brought together with assured components from the T&C and Infrastructure Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the Technology, T&C and Infrastructure Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

5.1 Technology In-Stream Testing – Release 4

The early and gradual ramp up of Technology In-Stream Assurance and Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new technology solutions into existing locations. As these new technologies will transition into the ROC facility once it has been built, the Technology Stream is in fact delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3.

Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the Technology

Stream to validate infrastructure designs against Technology components for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

5.2 Configurable Off the Shelf (COTS) Products and Defects

The ROC Program principles which underpin the technology design and implementation approach are restated below:

- The overarching philosophy of the technology program is to “Buy not Build” technology capability to meet the identified business needs
- New technology systems to be introduced will be ‘off the shelf’ to the extent that is practicable. i.e. configuration of Licensed Software, not changes to source code
- New technology business processes will be implemented as near to ‘out of the box’ as is practicable i.e. the existing business process will change to align with the processes that are provided with new systems
- The above principles apply provided there is no breach of regulatory requirements or internal policies

In response to these principles, the Program’s technology RfP sought to identify products which could deliver the required functionality via configuration of COTS products without the need to customise the base products. Despite this, the risk remains detailed design, build and testing could identify required functionality which can only be delivered via a change to the underlying COTS products. Given the lead time required to change the base product can be much greater than the time required to change product configuration, this represents a potential risk to the Program schedule.

The Program Test Management tool will be set up to clearly differentiate between:

- Defects which can be resolved via changes to product configuration
- Defects which need to be resolved via a change to the underlying COTS product

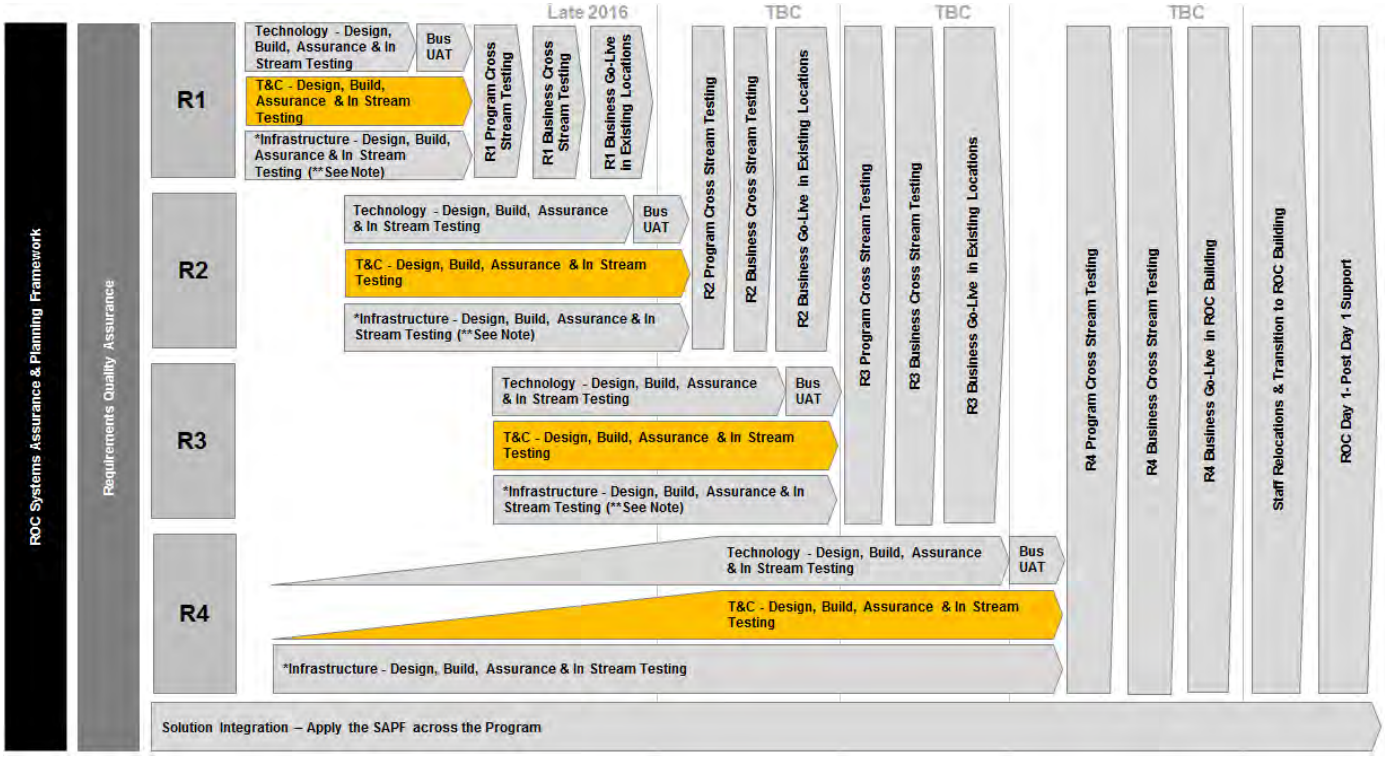
While the ROC Program may raise, track and manage both types of defects in HP ALM, fixes for the latter are expected to be delivered via product vendor roadmap(s) and internal processes. These activities would be cross referenced and tracked in HP ALM.

5.3 Enterprise Release Management

Within Sydney Trains, technology changes being delivered to the Production environment fall under Enterprise Release Management (ERM), which co-ordinates the scope of Enterprise Releases, impact assessments and gates Release content. One of the gates changes must pass through is the Change Approval Board (CAB), which provides the final approval required prior to Production deployment. It is anticipated ROC driven technology changes including both new systems and changes to existing applications will fall under ERM and require CAB approval prior to being deployed to Production.

6 In-Stream Transformation and Change Testing

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Transformation and Change (T&C) testing refers to the areas indicated below:



The T&C Stream solution components which are expected to require a level of assurance include:

- Current Processes & Future Processes
- Interim/BCP Processes
- IR/OD Strategy
- Role Definitions
- Workload Baselining & Assessment
- Procedures
- Work Instructions
- SME Training Dev & Delivery
- End User Technical Training Dev & Delivery
- End User Behavioural Training Dev & Delivery

Under the SAPF, the T&C Stream will develop an assurance strategy and plan(s) which will articulate the method by which each of these components will be assured.

On a Release by Release basis, the following T&C components will be used to verify technology systems delivered meet business requirements by testing the technology within the context of business processes and roles.

- Role Definitions
- Future Processes
- Procedures
- Work Instructions

As such, these T&C components will form the basis of Technology UAT scenarios and will need to be adequately assured within the T&C Stream to ensure they are mature enough to be relied upon as inputs to Technology UAT design.

T&C In-Stream testing and assurance will include formal business acceptance of T&C Stream components. On a Release by Release basis, assured T&C components will be brought together with assured components from the Technology and Infrastructure Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the T&C, Technology and Infrastructure Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

6.1 T&C In-Stream Testing – Release 4

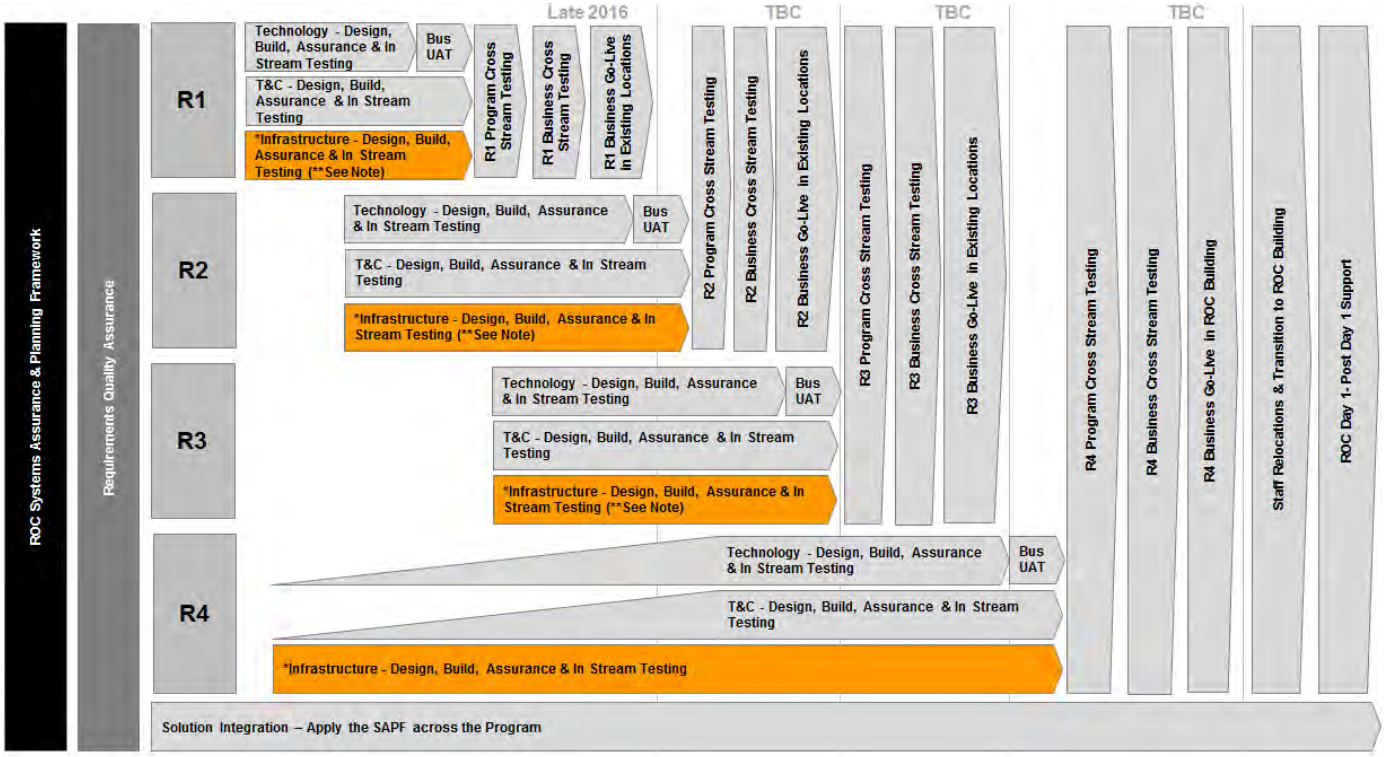
The early and gradual ramp up of T&C In-Stream Assurance and Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new processes and ways of working into existing locations. As these new ways of working will transition into the ROC facility once it has been built, the T&C Stream is in fact delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3.

Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the T&C Stream to validate infrastructure designs against T&C components for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

7 In-Stream Infrastructure Testing

In the context of the ROC Program Test Management Framework Overview Diagram, in-stream Infrastructure testing refers to the areas indicated below:



The ROC Program Infrastructure Stream has been structured into three sub-streams being:

- Operational Technology Systems
- Signalling Control Systems
- Property, including Security, Architecture, Building Shell and Building Systems

While the primary focus of the Infrastructure Stream will be delivery of the new building and the systems which reside within it, there may also be Infrastructure components delivered as part of Releases 1, 2 & 3.

Each Infrastructure sub-stream is expected to produce a number of components which will require testing and assurance. Under the SAPF, the Infrastructure Stream has developed an Infrastructure Assurance Plan (IAP), which articulates the method by which each of these components will be assured.

Where In-stream testing of Infrastructure components is required, it will be undertaken as part of the commissioning and testing processes which will be carried out by the ROC Infrastructure delivery stream. These processes must comply with Australian Standards, Sydney Trains and/or TfNSW Engineering Specifications and achieve required certification(s) and/or demonstrate regulatory compliance as required.

Infrastructure In-Stream testing and assurance will include formal business acceptance of Infrastructure Stream components. On a Release by Release basis, assured Infrastructure components will be brought together with assured components from the Technology and T&C Streams. Just as technology systems are packaged and tightly versioned and controlled throughout the testing process, as the components from other streams are brought together the package being tested can be thought of as a combination of components from the Infrastructure, T&C and Technology Streams given the 'solution' being delivered and tested is a combination of new roles, using new business processes, technology and infrastructure.

Learnings gained during testing which bring about a change to any baselined component of the solution will need to be managed under the Program Configuration Management Plan to ensure the impact of the change on other components of the solution is assessed and addressed where required to maintain the integrity of the solution as a whole.

7.1 Infrastructure In-Stream Testing – Release 4

The early and gradual ramp up of Technology and T&C Assurance and In-Stream Testing for Release 4 represents the relationship which exists between Releases 1, 2 & 3 and the end state, Release 4.

Releases 1, 2 & 3 will deliver new technology solutions and new ways of working into existing locations. As these new technologies and ways of working will transition into the ROC facility once it has been built, is the Technology and T&C Streams will in fact be delivering elements of the Release 4 solution as they are delivering Releases 1, 2 & 3. As such, the solutions implemented in these earlier Releases will inform the design of the new facility.

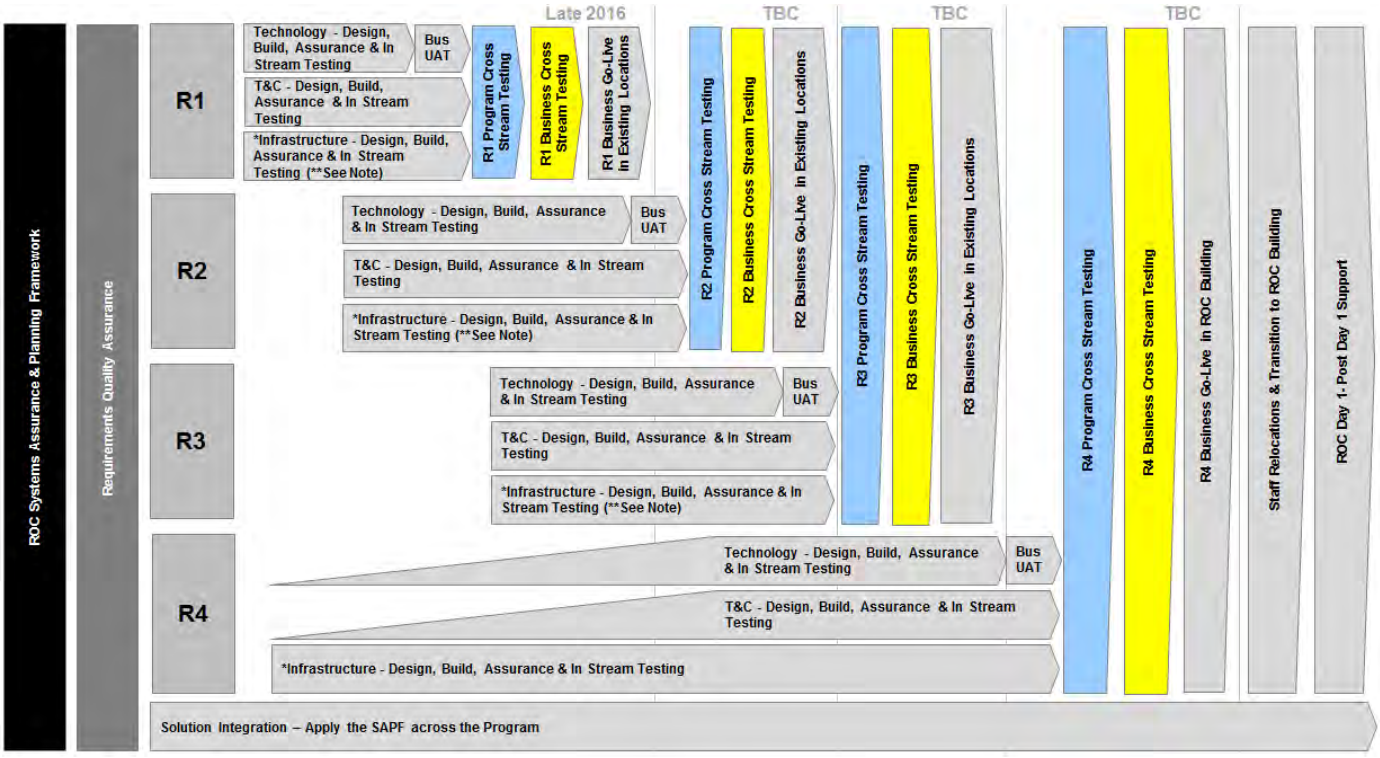
Given the considerable lead time around design and build of the facility, assurance of Infrastructure Stream solution components will rely on iterative interaction with the Technology and T&C Streams to validate infrastructure designs against the components of these streams for Releases 1, 2 & 3. Early on this interaction might be largely assumption based. As Releases 1, 2 & 3 are delivered, many of these assumptions will be replaced by elements of the solution which have been implemented into existing locations and will be inputs to the Infrastructure Design.

8 Cross-Stream Testing

Cross-Stream testing refers to the integrated testing performed across components from more than one ROC Program stream.

The Business Continuity & Program Testing stream will lead all Cross-Stream test phases on behalf of the ROC Program. Program streams, Portfolio Teams and vendor(s) will be expected to support Cross-Stream testing and specifically support any of their components being tested.

In the context of the ROC Program Test Management Framework Overview Diagram, cross-stream testing refers to the areas indicated below:



8.1 Cross-Stream Testing

Test Phase Definition:	Cross-Stream Testing will provide an opportunity to simulate 'new ways of working' as realistically as possible up to and including the boundaries and touch points with existing, unchanged Business processes. This will involve testers acting in new roles, using new business processes, technology and infrastructure to exercise the ROC solution. Components of the solution can be refined and scenarios re-run as required to demonstrate the solution provides the business with a safe, workable and robust way to manage operations which is also compliant with Human Factors requirements. In-Stream assurance and testing provides risk mitigation against defects being identified during Cross-Stream Testing. This is important given the resources, effort and logistics required to run Cross-Stream Testing scenarios are expected to be significant and the lead times to deliver certain defect fixes into Cross-Stream Testing will be considerable. A small subset of ROC processes will be identified and agreed to be the Cross-Stream test scenarios for each Release based on criteria of business criticality, frequency of use, risk and functional coverage. A ROC test principle states program testing should occur prior to business testing. Program test resources will execute Program Cross-Stream Test scenarios in order to identify and resolve defects prior to Business Cross-Stream Testing. Benefits of this approach include: • Use of professional test resources to save Business resources from 'testing fatigue' • Build program confidence prior to business exposure Business resources will then execute Business Cross-Stream Testing. Benefits of this approach include: • Duration, iterations and defects greatly reduced by program testing • Business resources initial experience with the ROC solution is positive • Positive word of mouth from business testers back to their teams The success of this approach can be measured by analysis of defects identified during Cross-Stream Testing. If defects which could have been identified and resolved during In-Stream testing and assurance are found during Cross-Stream Testing we would conclude In-Stream testing and assurance activities could have been more effective. If this is the case, further analysis should be conducted to determine how these activities can be improved for future Releases. If Cross-Stream Testing identifies and resolves the types of defects which can only be identified by bringing together the components of ROC Program streams and simulating 'new ways of working' as realistically as possible, we can conclude Cross-Stream Testing has served its purpose and In-Stream testing and assurance activities have been effective. It is envisaged heavily leveraging the test planning and preparation artefacts from In-Stream testing will be the most efficient way to deliver Cross-Stream Testing.

Test Phase Owner:	• Business Continuity & Program Testing Stream
Test Resources:	• Program Cross-Stream Testing – ROC Program resources • Business Cross-Stream Testing – Sydney Trains business users (ROC SME's) • Vendor, System Integrator and APD Test support via participation in defect triage, defect rectification, progression and regression testing of defect fixes for delivery to Cross Stream Testing as required
Test Governance:	• ROC Program
Deliverables:	• Cross-Stream Test Strategy • Detailed Test Plan (DTP) for Cross-Stream Testing of each Release • Test Objective Matrix (TOM) • Test Scenarios • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for Cross-Stream Testing of each Release
Test Location:	Release 1, 2 & 3 - Expected to be the Belmore BCP facility, which will provide additional assurance Belmore is fit for purpose as a ROC BCP facility. Release 4 - Expected to be the ROC building, which will provide additional assurance the ROC is fit for purpose and ready for operational go-live.
Test Environment:	ROC Cross-Stream environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	The Business Continuity & Program Testing Stream should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts.
Test Tool:	HP ALM
Test Artefacts:	Cross-Stream testing scenarios, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program

8.2 Requirements Quality Assurance (RQA)

The objective of RQA is to identify and remediate ambiguity, conflicts, inconsistencies, incompleteness or redundancy in requirements and/or specifications prior to a component or system being built. By improving the quality of requirements, RQA can enable design acceleration and decrease the duration and iterations of test phases as potential defects are identified and remediated prior to build.

The ROC Program has engaged an external consultancy with the tools, systems and expertise to provide an RQA 'proof of concept' for ROC Release 1. If this proof of concept is found to have been a good investment from a cost versus benefit perspective, the ROC Program may look to apply the approach more broadly across the Program. This activity will complement both the Requirements Management Plan (RMP) being delivered under the Systems Assurance and Planning Framework (SAPF) and the use of Holocentric as outlined below.

- The RMP provides an integrated approach for the management of requirements on the ROC Program including requirement definition, capture, documentation, traceability, baselining, version control and change management
- As the ROC Program's requirements management tool, Holocentric will be used to manage requirements in line with the recommendations within the RMP
- RQA will help to ensure requirements entered into Holocentric and managed in accordance with the RMP are of a high quality

8.3 Human Factors

The Sydney Trains rail network is a technical system, in which people are as much an integral part as any technology system or mechanical component. Technical systems are becoming more wide-reaching and complex, so it is essential to consider their impact on:

- Individuals, their knowledge, competence, skills, and abilities
- Local conditions, the workplace and how people perform as a team
- How the organisation employs people as valuable assets and invests in them

Human Factors supports the design of rail systems which optimise the contribution of rail staff. This can include the design of cabs, signalling panels, training courses and materials, management, recruitment processes, and control rooms. Applying human factors knowledge at the start of a project can reduce the need for re-design once systems have entered service, increase efficiency, reduce the potential of staff turnover, and increase productivity for the organisation as a whole.

On this basis, Human Factors will be a consideration throughout the ROC Program and within the design phases for T&C, Infrastructure and Technology Stream solution components.

A Human Factors Integration Plan will be delivered under the SAPF. This plan will outline how Human Factors requirements and assurance will be embedded within the ROC Program Design, Delivery and Testing Phases.

Cross-Stream Testing will represent a further opportunity to confirm how all the Human Factors elements of each stream come together and interact across the ROC program solution.

8.4 Early Business Benefits

In keeping with the sub-set of program principles listed below, ROC will look to identify opportunities to implement elements of the ROC Solution into current business locations prior to the new ROC building being ready to occupy, thereby delivering early benefits to the business.

- New technologies will be implemented in a phased roll out which optimises the balance of technical risk, business benefit and the level/rate of impact on affected users
- The program will avoid a “big-bang” implementation
- The technology roll out can occur prior to the completion and transition of the business users into the new ROC facility, provided that the business benefits associated with the new technology can be realised

Early realisation of these benefits will largely be enabled by the implementation of ROC Releases 1, 2 & 3 into current Business locations. Cross-Stream Testing will be applied to these Releases prior to any elements of the solution being operationalised. It is expected Release 4 Cross-Stream Testing may occur from the new ROC Building prior to staff relocations and ROC Day 1 operational go-live.

Delivery of ROC Program changes into Business operations are dependent on both the deployment of new/change technology into the Production environment and business readiness to go-live. Wherever possible the ROC Program plans to decouple these two activities.

9 Appendix A - Test Management Procedures

The general Test Management Procedures which will be adopted by the Technology Stream of the ROC Program are outlined in the sections below and are applicable to both internal Sydney Trains teams and vendor(s). These approaches may be applied to other Streams of the Program to the extent they are appropriate.

The test process typically involves the following stages:

- The **Engagement and Estimation** stage was largely conducted during preparation of the ROC Final Business Case
- The **Planning** stage lays the foundation for the test effort. The primary outputs of the planning stage are the ROC Program Test Management Framework (this document) and resulting Test Strategy documentation which will be produced by the program

Testing is an iterative process. Each test phase will transition through the following stages:

- **Preparation:** This stage builds on the initial planning effort. Detailed Test Plans DTP(s), Test Objectives Matrix TOM(s) and test cases are produced in preparation for test execution. Other key deliverables from this stage include the Technology Test Strategy, the Technology Environment Management Strategy (TEMS) and establishment of the test environment(s).
- **Execution and Reporting:** This phase involves execution of testing, tracking and reporting test execution and defect status. At the conclusion of execution, when the exit criteria have been met a Test Summary Report (TSR) is produced. The TSR provides an overview of the execution effort, associated test metrics, any major outstanding issues and generally provides a recommendation based on the test results.
- **Evaluation** is final stage of testing. The purpose of evaluation is to reflect, review and evaluate the overall test effort and activities to identify the things which worked well and should be retained within the testing process, as well as any opportunities to improve the way testing is conducted.

The execution of each of the nominated test phases often requires the involvement of many stakeholders. Test management and coordination becomes a complex undertaking. In particular the identification, coordination and availability of testing resources can be challenging. All personnel involved with the test effort need to understand their contribution as outlined in the 'Roles and Responsibilities' sections within test planning documentation.

The Test Strategy, Test Plans and associated test deliverables, are required as part of the overall Test Management Control System. They enable standardisation of the approach and management of testing, integrated planning and scheduling activities. These test management controls work in-conjunction with the Program Management Plan and the test execution controls as outlined in the following sections.

9.1 Entry and Exit Criteria

The following are examples of general test entry and exit criteria. Any additional criteria specific to particular test phase(s) should be called out in the DTP for that test phase:

Entry Criteria:	• Artefacts which test planning and preparation are dependent upon have been approved e.g. Requirements and Design documents • Test planning and preparation artefacts have been approved and/or accepted e.g. Test Strategy, MTP, DTP, TOM, test cases/scripts • Approved test cases have been loaded into the test management tool and testers have been granted the required level of access • Formal defect management and reporting process established • Availability of resources required to execute testing has been confirmed • Availability of resources required to analyse and resolve defects has been confirmed • Defect rectification SLA's are in place • Release notes describing the deployment package are available and include relevant details relating to the base product, code, configuration, reference data as required, plus installation/migration activities, supplied fixes, new features, any known defects and workarounds • Correct version(s) of deployment package(s) have been deployed to the test environment(s) • Test environments are available and in a fit state as confirmed by Shakedown Testing • Correct test environment access and credentials have been granted to testers • Test Data of sufficient quality, quantity and diversity to enable testing is available • Previous test phase exit criteria has been met and where applicable the TSR has been reviewed and approved by relevant stakeholders Once all test entry criteria have been met a test phase may commence. Where entry criteria have not been met the test phase cannot commence. Any deviation from the test entry criteria must be approved by the ROC Program Test Manager in consultation with ROC Program Management. If appropriate to do so, a risk or issue should be raised in the ROC Program DRICA-SBA and be managed via the ROC Program Risk/Issue Management process.

Exit Criteria:	• All test cases have been executed and the outcome recorded in the test management tool. An explanation has been provided for any test case which has not been executed • All defects identified during the test phase have been recorded in the test management tool and are available for review • No Severity 1 or Severity 2 defects outstanding • An agreed action plan is in place to address outstanding severity 3 and severity 4 defects including target resolution time frame The number of outstanding severity 3 and severity 4 defects and the cumulative impact of these defects on the overall solution must be accepted by Sydney Trains. Once all test exit criteria for a test phase have been met a TSR may be prepared. Where exit criteria have not been met the test phase should not conclude. Any deviation from the agreed exit criteria would need to be approved by the ROC Program Test Manager in consultation with ROC Program Management. If appropriate to do so, a risk or issue should be raised in the ROC Program DRICA-SBA and be managed via the ROC Program Risk/Issue Management process.

9.2 Test Phase Gate Meetings

Program Test Teams (with stakeholder participation as required) will conduct test gating meetings prior to commencement of test execution for each Program test phase. These meetings will serve as a checkpoint to determine whether:

- Exit Criteria from previous test phase have been met
- Entry Criteria for the following test phase have been met
- Any other risks, issues or constraints exist which need to be reviewed in the context of the coming test phase

9.3 Test Phase Suspension & Resumption

If any defects identified seriously impact test progress the Program Test Manager, in consultation with Program Management may elect to suspend testing. Criteria which might justify test suspension include:

- Hardware/software is not available at the times indicated in the project schedule
- Product under test contains one or more critical defects which seriously prevent or limit testing progress
- Assigned resources are not available when needed for test execution and/or support

If testing is suspended, resumption will occur when the problem(s) which caused the suspension have been resolved. Where the cause of suspension is a critical defect, the fix must be successfully verified by the test team before testing resumes.

9.4 Risk Based Testing

Risk will often be a critical consideration when the ROC Program Management is making decisions. At its core, testing is about quantifying and mitigating risk.

The ROC Program will adopt a risk based approach to testing which will assist with understanding and managing risk. This approach involves the prioritisation of test cases into essential, high, medium and low using criteria based on likelihood and/or impact of failure including:

- Priority of requirement(s) being tested
- Business criticality of the function
- Frequency of use
- Functional coverage

So far as it is feasible to do so, tests will be executed in priority order. Benefits of this approach include:

- Defects related to high priority test cases are identified earlier in a test phase
- At any point in time tests not executed are at the lower end of the priority scale

If test execution were to come under schedule pressure there are a number of options available to the Program including:

- Increasing resources working on testing
- Working extended hours and/or weekends
- Reducing the scope of testing to be executed

The latter can introduce an increased level of risk. In the event ROC Program Management need to consider reducing the scope of a test phase or exiting a test phase prior to the exit criteria being met for any reason, one of the primary considerations will be the level of risk the Program and stakeholders are prepared to accept.

Test related information can be produced to help decision makers and stakeholders quantify the risk associated with any such decisions. This information would be a key input to gaining the understanding and agreement required to deviate from the Program's Test Management Procedures.

9.5 Test Tools

The following test tools and applications will be used by the ROC Program:

- HP ALM is Sydney Train's enterprise test management tool. Test teams (both Sydney Trains and vendor) will utilise HP ALM for the management of manual test execution and defect management from SAT onwards as a minimum
- LoadRunner is Sydney Train's enterprise load and performance test management tool. It helps measure the behaviour and performance of a system under load. LoadRunner can emulate simultaneous and realistic system usage by thousands of users across an enterprise and employs performance monitors to identify and isolate potential problems
- Quick Test Professional is Sydney Train's enterprise automated regression test management tool. It can provide functional and regression test automation for software applications and environments

The test tools are administered by the Testing and Quality Assurance Services Team within TfNSW. First point of contact for test tool support should be the respective test phase Test Lead, then the Test Manager. If the matter cannot be resolved locally the Test Manager should escalate to the Testing and Quality Assurance Services Team.

9.6 Test Co-ordination

During test execution regular co-ordination meetings will be held between test team(s), Program representatives, IT Portfolio Team(s), Business stakeholders, Project Manager(s) and vendor(s). The purpose of these meetings is to report on progress and address any issues raised. The standing agenda for the meetings is as follows:

- Review test progress against forecast
- Review defects raised against program quality targets including:
  - Number of defects raised
  - Severities
  - Phase Containment Effectiveness (PCE) - Defects found in the current test phase which 'should' have been identified and resolved in an earlier test phase
- Review test resourcing levels against forecast
- Review test risks
- Review test issues
- Any other business

9.7 Test Status Reporting

During test execution test status reporting will typically occur on a daily basis. Status reporting will be distributed by email, which will be supplemented by regular co-ordination meetings and conference calls. The phase Test Manager is responsible for producing and distributing test status reporting, which will typically detail the following:

- Test progress against forecast summarising total tests by status
- Total defects raised summarised by severity, priority and status
- Plan for the following period
- Risks and/or issues
- Schedule and outlook

9.8 Defect Management

HP ALM will be used as the Program's test management tool.

The objective of defect management is to ensure all defects encountered during the course of testing are appropriately raised, detailed, evaluated, prioritised, reported, resolved, verified and closed.

This document provides details on how defects are to be managed for Program test phases including definitions of defect status, pass & fail criteria and defect severities and priorities.

The high level process by which defects will be managed on the ROC Program is outlined below:

- Any anomaly identified during testing should initially be raised in HP ALM noting the test case which was being executed when the defect was encountered and capturing sufficient relevant details to facilitate analysis of the defect
- Defects raised will be triaged and assigned to the most likely resolver group
- The resolver group should update the defect with details of the defect cause, nature of the fix applied, confirm a successful retest of the fix, successful regression testing if appropriate and the software version in which the fix will be delivered to the tester for verification

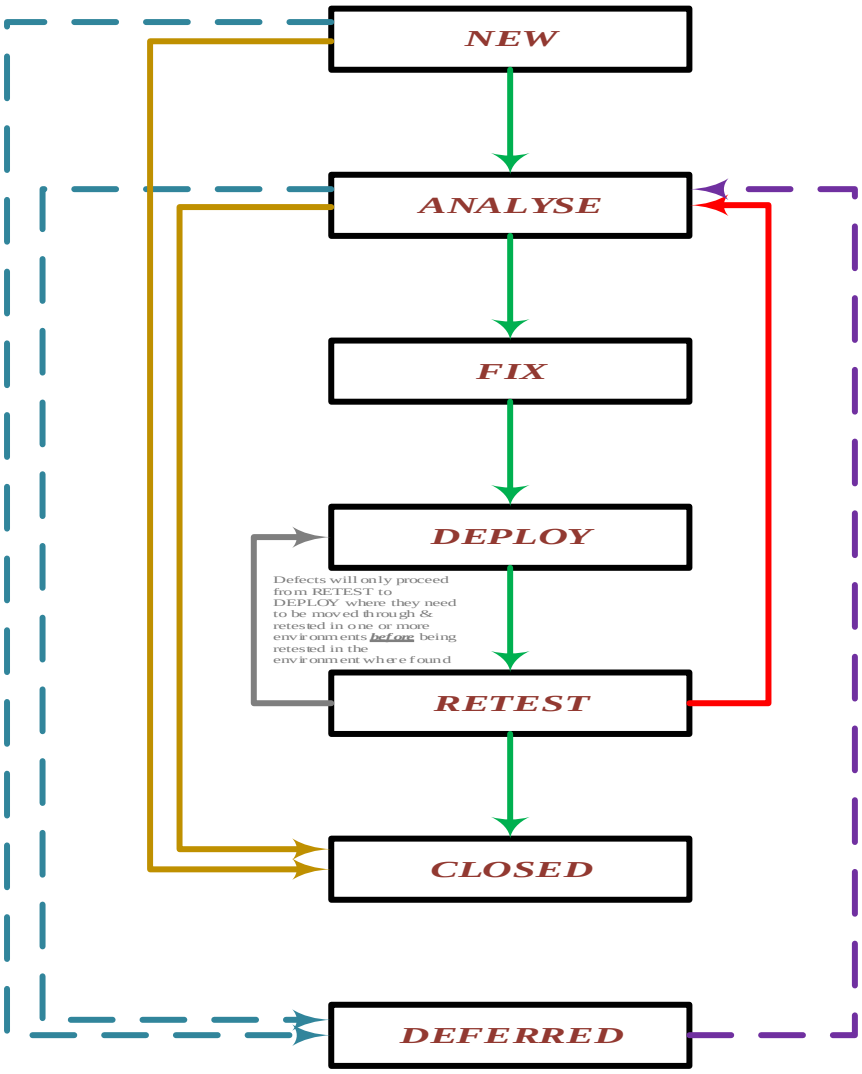
- Each software version delivering fixes into a test environment should be appropriately detailed in Release Notes
- Once the fix has been applied to the test environment(s) it should be retested by an appropriate resource (ideally the individual who raised the defect) to determine whether the defect has been resolved
- If retesting determines the fix has been successful, HP ALM should be updated by the tester to indicate the defect has been resolved. Relevant artefacts such as screen shots should be added to HP ALM and the defect should be closed
- If retesting determines the fix has not been successful, HP ALM should be updated by the tester to indicate the exact nature of the failure. Relevant artefacts such as screen shots should be added to HP ALM and the defect should be assigned back to the appropriate resolver group

This process is reflected in the following defect status definitions and Defect Process Workflow diagram.

Defect Status	Description	Actions to be undertaken
New	When a defect is raised it will automatically be assigned the status of NEW. This status indicates the defect has been logged and is undergoing business/testing evaluation/triage to determine whether it is a valid defect or not.	If the defect is found to be valid, the defect's status will be changed to ANALYSE and it will be re-assigned for a technical evaluation to determine the root cause of the problem. If the defect is found to be invalid, the defect's status will be changed to CLOSED and its sub-status will be set to identify the broad reason why it was classified as invalid. If the defect is an existing Production Problem, its status should be changed to FOUND (see companion document). In all cases, the defect record in QC must be updated to describe why the decision was made.
Analyse	Having determined the defect is valid from a business/testing perspective, the defect needs to be investigated to determine the underlying cause.	There are five possible outcomes from this technical review: 1. The defect is determined to be valid and will be fixed as part of the project's next implementation so its status should be changed to FIX and the defect will be re-assigned 2. The defect is determined to be valid but it will not be fixed as part of the next implementation. Status should be changed to DEFERRED and the defect's Cycle is reset to the implementation in which the defect will be addressed 3. The defect is determined to be valid but it will not be fixed, e.g. cost/effort of correcting the problem outweighs effort of implementing a workaround. Defect's status should be changed to CLOSED and sub-status ACCEPTED 4. The defect is invalid. Status should be changed to CLOSED, sub-status identifies reason why it was classified as invalid (DUPLICATE or REJECTED) 5. Defect is identified as a known Production Defect, status is changed to FOUND (see companion document)

Defect Status	Description	Actions to be undertaken
Fix	Having decided the defect will be corrected as part of the current project, a 'correction' will be produced and unit tested.	If those unit tests are successful, the defect's status will be changed to DEPLOY and it will be re-assigned. If the unit tests are not successful, the FIXER will make a further attempt to correct the problem and repeat those unit tests. This process will be rerun until such time as the unit tests are successful.
Deploy	This status indicates that the 'fix' for a defect is ready to be implemented into the test environment where the defect was found.	The timing of the fix's deployment must always be co-ordinated between the DEPLOYER and the TEST MANAGER so that the validity of the testing is not undermined. Once the 'fix' has been delivered into the nominated environment, the defect's status is changed to RETEST and it is re-assigned.
Retest	This status indicates that the defect's 'fix' has been deployed and can be retested under the original conditions (and in the same environment) where it was first encountered.	If the tests performed were ***not*** in the environment where the defect was originally found, its status should be changed to DEPLOY and its Sub-Status set so that it identifies the next environment on its way back to the location where it was found. If the retest is conducted in the environment where it was initially encountered, change the defect's status to CLOSED with a sub-status of SUCCESSFUL. Regardless of which test environment the retest occurs in, if it fails, change the defect's status to ANALYSE and its sub-state to RETEST FAILED.
Closed	This is the final state for every Pre-Production Defect.	As with every other status listed above, when changing a defect's status it is important that the appropriate comments are added to ensure that we have a complete audit trail of what has happened to the defect, why it happened and as much contextual information as possible has been included. See the next sub-section of this document for a full list of the sub-states used with this status.
Deferred	This status indicates the Business has formally agreed to have the defect fixed as part of a specified, later Release.	When testing for the implementation to which the defect was defers begins, the defect's status is changed to ANALYSE and its sub-status to PREVIOUSLY DEFERRED

The Defect Process Workflow diagram below reflects the path most program defects are expected to follow.



9.9 Defect Reporting Standards

All defects identified during testing will be analysed to determine a root cause of the problem. To support the required analysis, as a minimum the following information should be captured in each defect raised:

- Business requirement, Use Case and/or Test Case being executed when the defect was identified
- Detailed description of the problem
- Steps to recreate the problem
- Expected results – Outcome the tester expected to observe
- Actual results – Outcome observed including how it differed from the expected outcome
- Severity
- The software release (build) it occurred in
- Data, login, screenshots to be stored in defect.

Where possible, each tester should track the defects they have raised through to resolution.

9.10 Resolving Defects:

The cause of a defect can differ from the symptom(s) observed by a tester, so it is important the resolver updates the defect detailing the fix applied. The minimum information required in relation to the resolution of a defect may include:

- Cause of the defect
- Fix applied to resolve the defect
- Software version in which the fix will be delivered to the tester for verification
- Testing undertaken by the resolver to verify the defect has been corrected
- Impacted system(s) and regression implications of the fix applied

9.11 Defect Triage Meetings

The defect resolution process often requires many groups work closely including test team(s), project resources, Project Manager(s), vendor resources and internal Sydney Trains development teams. During test execution regular defect triage meetings will be held to:

- Review the severity and priority assigned to defects
- Determine the most appropriate resolver group
- Determine the target content and delivery dates for deployments to test environment(s)

9.12 Pass & Fail Criteria and Test Case Status

Test Case Status	Description
Pass	A test case will be deemed to have passed if: • The item tested behaves as expected and as per the requirement(s) it was derived from • The item will not introduce a problem or failure • The item will not introduce an unacceptable risk of a problem or failure
Fail	A test case will be deemed to have failed if: • The item tested does not behave as expected or as per the requirement(s) it was derived from • The item will introduce a problem or failure • The item will introduce an unacceptable risk of a problem or failure
Conditional Pass	A Conditional Pass is assigned to a test case which passes the intent of the test, where a low severity, non-critical defect has been observed and raised in HP ALM.
Not Run	Test case execution has not commenced.
Not Completed	Test case execution has commenced, is in progress and has not progressed to the point where a status of pass, fail or conditional pass can be assigned.

Not Applicable (N/A)	A status of N/A is assigned to a test case which has been agreed to no longer be applicable. Assigning the N/A status rather than deleting the test case ensures test case numbers in the TSR align to the number of test cases at the commencement of the test phase.
Blocked	A test case may be assigned the status of Blocked for a number of reasons including but not limited to: • A defect which needs to be resolved is preventing execution of the test case • Functionality not yet delivered • Required test data not available

9.13 Defect Severity Definitions

The severity level assigned to a defect is a reflection of how serious the defect is. It can be a measure of the impact on testing and the ability to continue with the test phase or of the impact the defect would have in the Production environment. The following definitions provide the severity levels which should be assigned to defects raised during testing within the ROC Program.

Severity	Severity Description
Severity 1	Critical Impact – Assigned to critical errors. Core functionality cannot be executed. Testing for the affected area cannot continue and no workaround exists. Examples of severity 1 defects include: • Safety Issues • The system or a core component of the system is inoperable Sydney Trains would not consider taking Severity 1 defects into the next test phase or to the Production environment.
Severity 2	High Impact – Assigned to major errors. Some key functionality cannot be executed or has not been delivered and no acceptable workarounds exist. Testing can continue on other functionality but the defect must be resolved before the component can be migrated to the next test phase or to production. Examples of severity 2 defects include: • The system or component is operable however one or more functions are not right or have not been delivered and no acceptable workarounds exist • Any issue with data accuracy or integrity which may cause confusion among the Sydney Trains end-user community Sydney Trains would not usually consider taking Severity 2 defects into the next test phase or to the Production environment unless there were exceptional circumstances. Stakeholders would need to have understood and accepted the risk/impact via approval of the Test Summary Report (TSR). There is an expectation any Severity 2 defects would be resolved by the next Release of the application.

Severity	Severity Description
Severity 3	Medium Impact – Assigned to minor errors. Some functionality does not conform to the specification or has not been delivered however, end-to-end transactions can be executed by applying acceptable workarounds to the impacted functions. No material impact on Sydney Trains end users. Testing can continue and the component can be migrated to the next test phase or to production providing exit criteria are met. Examples of severity 3 defects include: • The system or component is operable however one or more functions are not right or have not been delivered and acceptable workarounds exist Sydney Trains may consider taking a small number of Severity 3 defects into the next test phase or the Production environment provided the cumulative impact of these defects and associated work arounds are acceptable to stakeholders and do not damage the reputation of Sydney Trains, the Program or our partners. Stakeholders would need to have understood and accepted the risk/impact via approval of the Test Summary Report (TSR).
Severity 4	Low/Cosmetic Impact – Assigned to cosmetic errors. No material impact on Sydney Trains end users or the application. Examples of severity 4 defects include: • Misspelled (but not misleading) text • Inconsistent fonts • Poor grammar Sydney Trains may consider taking a small number of Severity 4 defects into the next test phase or the Production environment providing the cumulative impact of these defects and associated work arounds are acceptable to stakeholders and do not damage the reputation of Sydney Trains, the Program or our partners. Stakeholders would need to have understood and accepted the risk/Impact via approval of the Test Summary Report (TSR).

9.14 Defect Priority Definitions

Each defect is also assigned a priority level which indicates to development team(s) the order in which defects of the same severity should be addressed. Priorities which can be assigned to defects within the ROC Program are:

- 1 – High
- 2 – Medium
- 3 – Low

Assuming open defects of every severity and priority combination, the order in which defects should be addressed is outlined in the table below:

Order	Severity	Priority
1	Severity – 1	Priority – High
2	Severity – 1	Priority – Medium
3	Severity – 1	Priority – Low
4	Severity – 2	Priority – High
5	Severity – 2	Priority – Medium
6	Severity – 2	Priority – Low
7	Severity – 3	Priority – High
8	Severity – 3	Priority – Medium
9	Severity – 3	Priority – Low
10	Severity – 4	Priority – High
11	Severity – 4	Priority – Medium
12	Severity – 4	Priority – Low

9.15 Defect Rectification SLA's

Service Levels define the target time to fix defects and take into account:

- The urgency of the situation
- The need to strike a balance between speed, quality, sensible packaging and delivery of fixes

For the ROC Program it is envisaged SLA's will be agreed around delivery of configuration fixes and fixes to the underlying COTS products would be delivered via vendor product roadmap(s) and internal processes.

Note – The SLA information below has been taken from Sydney Trains Enterprise Release Planning (ERP) documentation and intended to be used as a guide. ROC Program SLA's will need to be agreed.

Defect Severity	Response Time	Resolution Time	Validation Time	Total SLA
Severity 1	0 - 2 Hours	4 Hours	4 – 8 Hours	Less than 1 Day
Severity 2	0 – 4 Hours	1 Day	1 Day	1 Day
Severity 3	0 - 2 Days	3 Days	4 Days	4 Days
Severity 4	0 – 5 Days	5 days	5 Days	5 Days

In the context of the defect statuses:

- Response Time is the time taken in the New Status (including Triage)
- Resolution Time is the time taken in the Analyse and Fix Statuses
- Validation Time is the time taken in the Deploy, Retest and Closed statuses
- Durations are expressed in business hours and business days
- Service levels are dependent upon availability of sufficient information to analyse and resolve the defect

9.16 Change Management

Under the SAPF, and more specifically the RMP and the CMP, once a specification has been reviewed and formally agreed upon it will be baselined. A baselined artefact can only be changed through formal change control procedures. On the ROC Program baselines are maintained as part of the Configuration Management Process under the CMP.

ROC Program requirements specification will be baselined and fall under the Configuration Management Process. As such any new requirements or variations to existing requirements identified during testing will be raised as a Program Change Request (PCR) and follow the Configuration Management Process.

Each PCR will need to be impact assessed based on a number of criteria including but not limited to:

- Cost
- Impact on Schedule
- Impact on test effort

9.17 ROC Technology Environments

The ROC Program will deliver four new technology systems into a complex landscape of existing applications. Technology environment requirements and specifications will be detailed in the Technology Environment Management Strategy (TEMS) and the Technical Infrastructure Design (TID), which are deliverables of the Detailed Design and Build Phases.

It is envisaged non-Production technology environments (including integration with existing applications where necessary) will be required to accommodate delivery of the following activities in line with Program time frames:

- System Development & Unit Testing
- System Testing
- System Acceptance Testing
- System Integration Testing
- Load & Performance Testing
- User Acceptance Testing
- Cross-Stream Testing
- User Training
- System Demonstrations

It is also expected instances of the new ROC technology systems will need to be delivered to complete the Sydney Trains Production Environment including DR capability.

9.18 ROC Technology Environment Management

In keeping with the ROC Statement of Requirements which was published as part of the technology RfP, Sydney Trains is looking for the System Integrator to be a single point of accountability with 'overall responsibility for the specification, design and build of ROC systems, through to bringing the system into production and change of control to the target support model'.

Technology environment management will be critical to achieving this. The details around technology tests environment management will be delivered in the Technology Test Environment Management Strategy (TEMS), which is a deliverable of the Detailed Design phase and as a minimum is expected to include the following information:

Activity	Description
Environment Availability	Aside from agreed maintenance windows, test environments are expected to be available 24/7 during test planning, preparation and execution periods. Sydney Trains should be both informed and approve any planned outages during these times. Unplanned outages will be managed through environment support.
Environment Support	Details will need to be agreed within the TEMS, however during test planning, preparation and execution periods the following types of environment support arrangements are likely to be required: • Standard Support Mon to Fri – 8.00am to 6.00pm • Extended Support Mon to Fri – 6.00am to 10.00pm (with 48 hours' notice) • Weekend Support Sat & Sun – 8.00am to 6.00pm (with 48 hours' notice)
Configuration Management	The Configuration Management Strategy the program will adopt to assure sound practice around code version control, code branching and merging.
Release Management, Release Notes, Deployments & Outages	In order to strike the right balance between speed, quality, sensible packaging and the delivery of fixes to testing, agreed deployment windows will need to be agreed. Test productivity can also be impacted if deployment outages occur too frequently. Outside the agreed deployment times there should be a provision whereby the Phase Test Manager can agree to ad hoc deployments if required. Each deployment to a test environment should be accompanied by sufficiently detailed Release Notes to inform the test team which fixes have been delivered and enable the status of those items to be updated in the test management tool.
Back Up & Restore	The back-up and restore requirements for test environments.
User Access & Administration	The provision of user access to test environments including ensuring access to the required role profiles and privileges.

Many test phases will have a dependency on integration with existing application environments. These dependencies should be detailed within the TEMS to ensure ROC test environment requirements are met.

9.19 Testing Escalation Path

Escalation is a critical process used by Program team members to resolve issues. Clear communication is the key to any escalation process and the objective of escalation is to create a path for resolution of issues.

For ROC testing activities the Escalation path will be as follows:

Tester => Test Lead => Test Manager => Program Test Manager => Program Management

Some the key principles of the escalation process have been outlined below:

- All program team members and participants are empowered to escalate
- Escalation needs to be managed
- Escalation must be documented
- Escalation needs to be timely
- Escalation is a risk and issue mitigation process

9.20 Training

Sydney Trains business users (also known as Subject Matter Experts or SME's) who will participate in Technology UAT and Cross-Stream Testing will need to be trained in the new ROC technology systems, processes and procedures prior to the commencement of R1 Technology UAT.

Training SME's to participate in these activities and the subsequent training of all end users is within the scope of the ROC T&C stream.

10 Appendix B – Technology Test Phases

The ROC Program has engaged product vendors and a System Integrator who will deliver the majority of Technology In-Stream testing on behalf of the Program. This document does not set out be prescriptive about how these vendors deliver testing. Vendors should document their recommended test strategy and approach via deliver of the Technology Test Strategy and other test planning documentation for Sydney Trains review and approval. The ROC Program will also provide a layer of Test Governance across vendor technology testing.

In January 2015 an agreed interim version of this document (v1.0) was shared with technology vendor(s) participating in the High Level Design Phase of the Program. It provided an early view of the Program Test Management Framework, including early Program thinking around technology test phases, roles and responsibilities to assist vendors in preparing a BAFO. The detail relating to these test phases and how they might be delivered are reflected in this appendix.

10.1 Shakedown Testing

Following a deployment to any test environment a Shakedown Test will be performed. The Shakedown Test is generally a selected sub-set of test cases executed to verify the deployment has been successful and all required components of the test environment are present with required connectivity and interfaces in place. A successful Shakedown Test indicates both the deployment and the environments are ready for the commencement of a test phase.

10.2 Unit Testing (UT)

Test Phase Definition:	Unit testing focuses on the key activities which must be verified at the component level to demonstrate modules operate as designed. Unit Testing is executed to ensure valid operation of components prior to System Testing and may include verification of: • Mandatory Fields • Event Handling • Boundary Testing of Upper & Lower Limits • Character Acceptance • Error and exception handling
Test Phase Owner:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Resources:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Deliverables:	There will not be any formal deliverables produced as artefacts of Unit Testing. System Testing will follow, be delivered by the same test phase owners as Unit Testing and be governed by the ROC Program.
Test Location:	Vendor site(s)
Test Environment:	ROC Dev environment(s). Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.

Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Application teams and vendors may elect to either use in-hose test management tools or Sydney Trains test management tool (HP ALM) for Unit Testing.
Test Artefacts:	There are no formal test artefacts produced during Unit Testing which will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.3 System Testing (ST)

Test Phase Definition:	New ROC systems and changes to existing applications tested without integration. System Testing may include: • Design Validation – Ensures an individual system as a discreet module will correctly process, pass and store data as specified. Test stubs, harnesses or simulators should be used during System Testing to ensure boundaries of the solution are validated in preparation for integration testing • Usability Testing – Ensures the system complies with application standards and presentation policies. This may include consistency of hotkeys, uniform navigation and listing standards. Usability Testing ensures the new application or change to an existing application will 'fit' into the existing application landscape • Data Conversion – Verification of data loads, data migrations, data conversions and data handling. Includes ensuring any data to be loaded is accurately defined • Service validation including adoption of standards e.g.: SIRI and simulated service testing using SOAP UI and stubs • Testing of Non-functional requirements
Test Phase Owner:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Resources:	• SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications
Test Governance:	• SP4 – Systems Integrator • ROC Technology Stream

Deliverables:	Deliverables to be provided for each product and change being system tested: • Detailed Test Plan (DTP) for System Testing • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for System Testing
Test Location:	Vendor site(s)
Test Environment:	ROC Dev environment(s). Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Application teams and vendors may elect to either use in-hose test management tools or Sydney Trains test management tool (HP ALM) for System Testing.
Test Artefacts:	System test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.4 System Acceptance Testing (SAT)

Test Phase Definition:	SAT verifies each application which has exited System Testing can be correctly installed, configured and provisioned into an integrated ROC Test Environment. Each Product Vendor will then execute an agreed subset of tests to prove the applications and environment are ready for the commencement of SIT.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	Test Execution: • SP1, SP2 & SP3 product vendor(s) • Sydney Trains Portfolio Teams for changes to existing applications Witnessing Testing: • SP4 – System Integrator

Test Governance:	• SP4 – System Integrator
Deliverables:	Deliverables to be provided for each product and change being system tested: • Detailed Test Plan (DTP) for System Testing • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for System Testing
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC SAT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	SAT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.5 System Integration Testing (SIT)

Test Phase Definition:	SIT verifies systems which have been proven to function correctly in System Testing work together when integrated. System Integration Testing should commence with point to point service integration testing for example REM to TIBCO, TIBCO to REM, changed existing application to TIBCO, TIBCO to changed existing application. Transaction flows across all components and systems which make up the ROC Technology solution will then be verified to ensure data flows through each component of the solution as expected without conflicts, corruption, duplication or loss. SIT should also include: • Non-functional testing such as failure and recovery • Sociability Testing which ensures all new and existing applications can co-exist on a user's desktop without conflict.

Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for SIT • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for SIT
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC SIT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	SIT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.6 Load & Performance Testing (L&P)

Test Phase Definition:	Load & Performance Testing evaluates the compliance of a system or software components against specified non-functional requirements such as response times, transaction processing time and resource utilisation. Load and Performance Testing may include the following types of tests: • Performance • Soak • Volume • Scalability • Stress • As we as providing results which can be used as an input to Capacity Planning It is expected L&P Testing will first be executed within the SIT time frames and be re-run over numerous iterations throughout the program lifecycle.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for L&P • L&P Scripts • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for L&P
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	The environment used for L&P Testing should be as 'production like' as possible. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) Document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.

Test Tools:	Load Runner and HP ALM
Test Artefacts:	L&P test scripts, results and defects stored in Load Runner and HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.7 Security & Penetration Testing

Test Phase Definition:	Security Testing checks whether the application(s) or service(s) are secure including requirements covering confidentiality, integrity, authentication, availability, authorisation and non-repudiation by answering the following questions: • How vulnerable is the system to attacks; can anyone hack the system or login to the application without authorisation? • How well is the data protected while the system maintains functionality? • Is there any information leakage via encryption, firewalls, wide range use of software and hardware? For the ROC Program, Security requirements as stated in the Detailed business requirements will be tested during System and System Integration Testing as practicable. As such, these activities will be covered by the Technology Test Strategy document and subsequent technology test planning documentation. The rest of this section relates specifically to Penetration Testing, which is a specific subset of Security Testing. Penetration Testing involves playing the role of an attacker in order to determine the vulnerability of an organisation's IT landscape against unauthorised attack, malicious user(s) or malware. The ROC Program plans to engage a third party to undertake Penetration Testing. The scope of Penetration Testing required by the ROC Program is to be determined during the build phase and documented in the Security and Penetration Detailed Test Plan. It is envisaged Penetration Testing may be re-run over numerous iterations throughout the life of the ROC Program.
Test Phase Owner:	• ROC Technology Stream
Test Resources:	• External Consultancy
Test Governance:	• ROC Technology Stream and Sydney Trains Security Architect(s)
Deliverables:	• Detailed Test Plan (DTP) for Security & Penetration Testing • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for Security & Penetration Testing Note – Due to the nature of Security & Penetration Testing, distribution of artefacts may be restricted.

Test Location:	TBC. Potentially External Consultancy offices.
Test Environment:	TBC via consultation with Sydney Trains Security Architect(s) and documented in the Security and Penetration Detailed Test Plan.
Test Data:	Test data for Penetration Testing will be the responsibility of the external consultancy and will be socialised and accepted (as required) via the reviews and approval of Security & Penetration Testing Planning artefacts.
Test Tool:	Access to defects identified during Penetration Testing by the external consultancy is likely to be restricted. As such they may be recorded in a separate instance of HP ALM or in an appropriate securely stored format. Additional tools to be supplied by external consultancy as required.
Test Artefacts:	Security & Penetration scenarios, results and defects will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.8 Automated Regression Testing

Test Phase Definition:	A selection of ROC scenarios will be selected and form the basis of the ROC Automation Regression Suite. These scripts will need to be maintained throughout the program lifecycle as ROC systems and existing applications are developed and changed. It is expected Automated Regression Testing will first be executed within the SIT time frames and be re-run over numerous iterations throughout the program lifecycle.
Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• SP4 – System Integrator
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for Automated Regression • Automated Regression Scripts • Test Results (including evidence - screenshots, log files as required) • Status Report(s) – during execution • Defect Report(s) – during execution • Test Summary Report (TSR) for Automated Regression
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	Automated Regression scripts may be run in a number of environments over the course of the ROC Program. Details to be confirmed in the ROC Technology Test Strategy and ROC Technology Environment Management Strategy (TEMS) documents.

Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	Quick Test Professional (QTP) and HP ALM
Test Artefacts:	Automated Regression test scripts, results and defects stored in QTP and HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

10.9 User Acceptance Testing (UAT)

Test Phase Definition:	UAT verifies Business requirements have been met in the technology systems delivered. The objective of UAT is to test the overall business functionality of technology systems from an end user perspective in the context of Business processes and roles to assure the overall solution is fit for use in a business context. By proving systems will perform as expected, UAT allows sponsors, stakeholders and end users to provide their acceptance of the technology systems delivered. A ROC test principle is that program testing should occur prior to business testing. Program test resources will execute UAT scenarios in order to identify and resolve defects prior to Business UAT. Benefits of this approach include: • Use of professional test resources to save Business resources from 'testing fatigue' • Build program confidence prior to business exposure Business resources will then execute (a potentially cut down set of) UAT test cases. Benefits of this approach include: • Duration, iterations and defects greatly reduced by program UAT • Business resources initial experience with systems is a positive one • Positive word of mouth from business testers back to their teams The success of this approach can be measured by analysis of the defects identified during Business UAT. If earlier test phases are permitted to achieve their agreed exit criteria and defects which could have been identified and resolved in those test phases are found during Business UAT, we would conclude earlier test phases could have been more effective. If this is the case, further analysis should be conducted to determine how these test phases can be improved for future Releases. If Business UAT identifies and resolves the types of defects only SME's from the Business were likely to pick up, we can conclude Business UAT has served its purpose and earlier test phases have been effective.

Test Phase Owner:	• SP4 – System Integrator
Test Resources:	• Program UAT – ROC Program and SP4 resources • Business UAT – Sydney Trains business users (ROC SME's), supported by ROC Program, Product Vendor and System Integrator resources
Test Governance:	• ROC Technology Stream
Deliverables:	• Detailed Test Plan (DTP) for UAT • Test Objective Matrix (TOM) • Test Cases • Test Results (including evidence - screenshots, log files as required) • Daily Status Report(s) • Daily Defect Report(s) • Test Summary Report (TSR) for UAT
Test Location:	ROC Test Lab – Location to be confirmed.
Test Environment:	ROC UAT environment. Details to be confirmed in the ROC Technology Environment Management Strategy (TEMS) Document.
Test Data:	Vendors should provide the ROC Program with early visibility of their test data requirements. The ROC Program intends to provide vendors with representative Master, Reference and Transactional data for use during all test phases. Test data for each test phase will be socialised and accepted via reviews and approval of Test Planning artefacts. In order to maintain the Program schedule, to any extent the ROC Program is unable to provide vendors with representative Master, Reference and Transactional data, vendors are requested to use their own data which should be as representative as possible.
Test Tool:	HP ALM
Test Artefacts:	UAT test cases, results and defects stored in HP ALM will become Sydney Trains owned artefacts at the conclusion of the ROC Program.

11 Related Documents

The following documents have been referenced in preparing this Program Test Management Framework.

Document Title	Version Number
ROC Roadmap	V2.1
ROC Program Systems Assurance & Planning Framework SoW	V11.1
Rail Operations Centre Concept of Operations	V4.0
PMLC ROC Project Management Plan	V2.2
ROC Final Business Case	V5.0
Program Quality Management Plan	V2.0
Infrastructure Assurance Plan	V1.0
ROC Solution Scope	V1.1
Rail Operations Centre (ROC): Timeline to 2018	(Final)

Appendix I – Environment Specifications

As set out in Module 3.

Appendix J – Governance Schedule

ROC-TEC-PL-0001 -
ROC Technology Ver

Communication Plan

Rail Operations Centre (ROC) Vendor Communication Plan
Rail Operations Centre Program

ROC Release 2 Detailed Design	
Project or Program	"Program"

Communication Plan

Document Ownership Information

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Capital Register ID	3141.02	
Sponsor	Howard Collins, Chief Executive	Sydney Trains
Sponsor's Delegate	Tony Eid, Executive Director, Future Network Delivery	Future Network Delivery Directorate
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Version	**Date**	**Author**	**Reason for Issue / Changes Included**
1.0	27/11/2015	Kelly McDonald (Change Specialist)	First Draft for Sydney Trains review
1.1	12/02/2016	Kelly McDonald (Change Specialist)	Further update following internal review
1.2	12/02/2016	Kelly McDonald (Change Specialist)	Second Draft for Thales review. Updates include Thales feedback; Roles and Governance section changes; minor corrections
1.3	29/02/2016	Kelly McDonald (Change Lead)	Migrated document to new template format; Issue and Escalation Process section minimised
1.4	04/04/2016	Kelly McDonald (Change Lead)	Governance section updated
1.5	13/05/2016	Kelly McDonald (Change Lead)	Final update following joint review of this and the Governance Structure document with Sydney Trains
1.5.1	17/05/2016	Kelly McDonald (Change Lead)	Definition table added; minor Role updates
1.5.2	23/05/2016	Kelly McDonald (Change Lead)	Minor corrections/updates (pp1, 6-11; 23-25; 27-29; Document Properties; Header/Footer)

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Contents

List of Diagrams

Reference Documents

The following documents were referenced as part of the development of this document:

Document Name	Version	Date
ROC Release 1 REM Detail Design Project Communication Plan	v1.0	12/11/2015
ROC Release 1 REM Detail Design Project Communication Plan	v3.0	19/01/2016
ROC Release 1 REM Detail Design Project Communication Plan	v4.0	05/02/2016
ROC Meeting Etiquette Poster	N/A	12/11/2015
ROC Program Governance Schedule (contract schedule)	N/A	11/05/2016

1 Document Purpose

The ROC Technology Vendor Communication Plan clarifies the communication roles, responsibilities and governance to ensure that all Project stakeholders are engaged and informed about relevant project development.

The ROC Technology Vendor Communication Plan outlines:

- What needs to be communicated and to whom;
- How often these exchanges should happen; and
- In what format and why they are necessary.

2 Definitions

Term	Definition
Customer	"Customer" means Sydney Trains
DRICA / DRICASB	Dependencies | Risks | Issues | Changes | Actions / Dependencies | Risks | Issues | Changes | Actions | Scope-Benefits
Individual Contractor / Contractors	Refer to "Other Contractor"
System Integrator (SI) Contractor or Contractor	"System Integrator (SI) Contractor" or "Contractor" means Ajilon Australia Pty Ltd
Other Contractor	"Other Contractor" means the IMS, CIMS or DTTS contractor
SME	"SME" means Subject Matter Expert

3 Project Reporting

3.1 Project Highlight Reports

A Project Highlight Report will be published weekly by the SI Project Manager to the Sydney Trains ROC Program (refer to Matrix for full list of recipients). The report will contain:

- Achievements for the period;
- Plan for the next period;
- Status of any Change Requests;
- Milestones and deliverable progress; and
- Risks, Actions, Issues and Decisions (DRICA)

4 General

4.1 Introduction

The ROC Technology Vendor Communication Plan document describes the relationship between the Customer and the Contractors (Vertical), as well as the SI Contractor and Other Contractors (Horizontal) to enable effective, efficient, and high-quality delivery of Services to the Customer and to each other, to enable the Customer to achieve the business objectives of the ROC Technology Solution.

This document sets out the communication structure for overall management of the relationship, the roles and responsibilities of the parties to maintain a working relationship, and the type, content and frequency of the meetings that will be held.

The purpose of the ROC Technology Vendor Communication Plan is to ensure that guiding principles, objectives, structures, operating guidelines, methods and measures for implementing effective communication are clearly defined and consistently implemented.

4.2 Guiding Principles

The ROC Technology Vendor Communication Plan is designed to achieve the following guiding principles:

a. Promoting a collaborative relationship

b. Continually validating consistency of the results and benefits derived from the ROC Technology Vendor Communication Plan with the Customer's and the Contractor's expectations and objectives

c. Establishing a structure to streamline day-to-day management and administration of the relationship

d. Ensuring that an effective relationship management process exists for communication, decision making, joint issue resolution, the Customer satisfaction, contract change and continuous improvement

e. Ensuring overall monitoring of contractor performance

f. Ensuring that potential issues in due course are investigated, resolved and – if necessary – escalated

g. Establishing effective means for managing the delivery of quality

h. Monitoring established Customer objectives.

5 ROC Technology Vendor meetings

The following ROC Technology Vendor meetings are established for the ROC Program.

5.1 Executive Meeting

The Executive meeting is the forum from which executives from Sydney Trains and the System Integrator discuss the progress of the project and potential future opportunities.

The Executive meeting is conducted annually involving: from Sydney Trains, the CIO, General Manager of the relative Business and the ROC Program Director. From the Contractors perspective, attendees should be: CEO, CIO, and Senior Account Manager or appropriate “C” level Representative.

The following administrative matters relate to the Executive Meeting:

a. Attendees:
   i. From the Customer: Chief Information Officer (Chairman), the General Manager (of the relative Business), the ROC Program Director (who supports the CIO).
   ii. From the Contractor: Chief Executive Officer (Vice Chairman), the Chief Information Officer, Senior Account Manager or “C” level representative.

b. The Customer’s Chief Information Officer shall be supported by the ROC Program Director; The Contractor’s General Manager shall be supported by the Managing Director.

c. Agenda: The following items should be, as a minimum, on the agenda for each meeting:
   i. Resolution of risks and issues related to the overall relations between the Customer and the Contractor
   ii. Overall performance against business goals
   iii. Where applicable, revision of goals and long term plans for development of the relationship
   iv. Identify and discuss joint strategic business direction and opportunities
   v. As the highest level on the escalation path. Act as the ultimate point of joint dispute resolution.

d. Material: The following support document should be made available to the attendees of the Executive Meeting:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. ROC Vendor Executive Pack documenting contract performance
   iv. Recommendations as escalated from the ROC Vendor Steering Committee
   v. Critical Risk and Issues derived from the Risk and Issues Register
   vi. Decision log.

e. Meeting minutes: Minutes shall be taken by the Contractor and socialised with the Customer’s attendees within 48 hours of the end of the meeting.

f. Frequency: Executive Meetings shall be held annually commencing on the first anniversary of execution of the Detailed Design agreement.

5.2 ROC Vendor Steering Committee

The ROC Vendor Steering Committee is the primary focal point for executive and strategic decisions, as well as the escalation point for resolution. The ROC Vendor Steering Committee shall meet monthly or more frequently if required, to promote a relationship based on trust and mutual understanding and assess and set overall strategy for the relationship.

The ROC Vendor Steering Committee comprises Executives from the Contractor as well as Executives associated with the ROC Program.

The following administrative matters relate to the ROC Vendor Steering Committee meeting:

a. Attendees:

   i. From the Customer: The Chief Information Officer (Sydney Trains), the General Manager of Strategic Procurement and the ROC Program Director. The following attendees report in to this meeting: Commercial Manager, ROC Program Stream Manager.

   ii. From the Contractor: The General Manager responsible for the account or appropriate “C” level Representative. The following attendees report in to this meeting: Project Director.

b. Agenda: The Meeting Agenda of the ROC Vendor Steering Committee includes:

   i. Project update

   ii. Strategic direction of the ROC Program

   iii. Status of the relationship between the Parties

   iv. Project budget / incentive opportunities

   v. Future opportunities associated with the ROC Program and Sydney Trains in general

   vi. Escalated risk raised by the Management Committee

c. Material: The following support document should be made available to the attendees of the ROC Vendor Steering Committee:

   i. Meeting Agenda

   ii. Minutes of previous meetings

   iii. Joint DRICA (“A” and “B” risks only)

d. Meeting Minutes: Minutes shall be taken by the Contractor and socialised with attendees within 48 hours of the end of the meeting

e. Frequency: ROC Vendor Steering Committee Meetings shall be held monthly.

5.3 Multi-Vendor Management Committee

The Multi-Vendor Management Committee deals with governance between all Parties to the ROC Program and as a consequence, expressly excludes discussions relating to commercial matters of any party: e.g. Contractors financial affairs, product strategic direction, IP etc.

The Multi-Vendor Management Meeting is the forum to review, discuss and provide recommendations on technology, performance and relationship improvements for continual service improvement (CSI).

The Multi-Vendor Management Meeting should be held quarterly unless ad hoc meetings are required.

In order to resolve issues or disputes, attendees at the Multi-Vendor Management Meeting should not be those whom attend the Vendor Management Meeting.

The following administrative matters relate to the Sydney Trains & System Integrator:

a. Attendees:
   i. From the Customer: The ROC Program Director, ROC Program Stream Manager and Commercial Manager.
   ii. From the Contractor: The Senior Account Manager and Program Director
b. Agenda: the Multi-Vendor Management Committee Agenda includes:
   i. Project status and update
   ii. Schedule Management
   iii. Relationship Management
   iv. Proposed efficiencies / business improvement
   v. Future scope opportunities associated with the ROC Program
   vi. Escalated risk raised by the Governance Meeting
   vii. General business
c. Material: The following support document should be made available to the attendees of the Multi-Vendor Management Committee:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. Joint DRICA ("A" and "B" risk only)
d. Meeting Minutes: Minutes shall be taken by the Contractor and socialised with the Customer's attendees within 48 hours of the end of the meeting
e. Frequency: the Multi-Vendor Management Meeting is to meet quarterly.

5.4 Management Committee (Individual Contractors)

The Management Committee (Individual Contractors) conducts governance on a managerial level and is primarily focused on ensuring vendor performance, relationship management and commercial performance, including change requests, invoices, service credits and incentives.

The Management Committee (Individual Contractors) should be held monthly unless ad hoc meetings are required.

In order to resolve issues or disputes, attendees at the Management Committee (Individual Contractors) should not be those whom attend the Vendor Management Meeting.

The following administrative matters relate to the Management Committee (Individual Contractors):

a. Attendees:
   i. From the Customer: The ROC Technology Program Manager and Commercial Manager. The following attendees report in to this meeting: ROC Release Project Managers.
   ii. From the Contractor: The Senior Account Manager and Program Director. The following attendees report in to this meeting: Contractor Release Project Managers.
b. Agenda: the Management Committee (Individual Contractors) Agenda includes:
   i. Project status and update
   ii. Schedule Management
   iii. Commercial Management
   iv. Relationship Management

v. Proposed efficiencies / business improvement

vi. Future scope opportunities associated with the ROC Program

vii. Escalated risks raised by the Multi-Vendor Management Meeting

viii. General business

c. Material: The following support documents should be made available to the attendees of the Management Committee (Individual Contractors):

i. Meeting Agenda

ii. Minutes of previous meetings

iii. Project Status Update Pack

iv. Joint DRICA ("A" and "B" risks only).

d. Meeting Minutes: Minutes shall be taken by the ROC PMO representative and socialised with the Customer's attendees within 48 hours of the end of the meeting

e. Frequency: the Management Committee (Individual Contractors) is to meet monthly

5.5 Vendor Management Meeting

The Vendor Management Meeting focuses on the overall service delivery of the Contractor and Other Contractors. Meetings should be held weekly to ensure the Project remains focussed on the critical path, and address matters such as delinquency of performance or differing interpretations of the Contractors obligations, progression of the relative ROC Release, service delivery, quality, issue clarification and resolution etc. Where these cannot be resolved to the mutual satisfaction of the Parties, the issue should be escalated to the Management Committee.

Vendor Management Meetings should be conducted by the Project Managers. Items to be discussed include: progression of the relative stream, service delivery, quality, issue clarification and resolution etc.

No commercial matters are discussed at this level due to the involvement of a number of different vendors.

The Vendor Management Meeting is the first level of management oversight of the ROC Program and should be conducted in separate Release streams to reflect the unique roles of the Individual Contractors.

The following administrative matters relate to the Vendor Management Meeting:

a. Attendees:

i. From the Customer: the relative ROC Release Project Manager, Technology Architect or nominated delegate

ii. From the Contractor: Release Project Manager, Project Coordinator and nominated technology SME

b. Agenda: The following items should be, as a minimum, on the agenda for each meeting:

i. Performance against the schedule

ii. Proposed scope changes

iii. Deliverable status, including acceptances

iv. Resource planning

v. Customer's CSI compliance

vi. Risks and Issues

vii. Escalation points for Management Committee Meeting

c. Material: The following support documents should be made available to the attendees of the Vendor Management meeting:
   i. Meeting Agenda
   ii. Minutes of previous meetings
   iii. Project Highlight Report
   iv. Risk and Issues derived from the Risk and Issues Register

d. Meeting minutes: Minutes shall be taken by the Contractor and socialised with the attendees within 48 hours of the end of the meeting

e. Frequency: Vendor Management Meetings shall be held weekly.

5.6 Technology and Risk Management Meeting

The Technology and Risk Management Meeting is the forum to discuss and provide recommendations on IT architecture, standards, and all aspects of risk management and IT security

The following administrative matters relate to the Technology and Risk Management Meeting:

a. Attendees:
   i. The Customer: ROC Technology Lead Architect, Technology Program Manager, ROC Release Architect and relative Release SME's as required
   ii. The Contractor and Other Contractors: Program Director, Release Architect and relevant SME's.

b. Agenda: The following items should be, as a minimum, on the agenda for each meeting:
   i. Review and propose technology directions, standards and architecture
   ii. Discuss and approve new and innovative services proposed by the Contractor
   iii. Discuss and review cross-vendor technology issues
   iv. Review impact of introducing applications into the legacy environment
   v. Propose changes to architecture and IT standards for approval by the Customer's architecture team
   vi. Review any proposals for reductions in the costs of the Services driven by new technology
   vii. Explore and understand innovations in technology that could enable business benefit for the Customer
   viii. Proactively propose, describe and plan innovation initiatives and provide innovation project recommendations to the Executive Level
   ix. Align security architecture, policy and operations
   x. Plan, review and monitor joint security initiatives and requirements
   xi. Evaluate risk management issues including both actual risks and contingencies
   xii. Evaluate recommendations in regard to proactive measures and remediation
   xiii. On request from the ROC Vendor Steering Committee investigate opportunities for innovation or other special tasks within that area
   xiv. Resolve any issues promptly and escalate if necessary in accordance with Section (Issue Escalation Process) in this schedule

c. Material:
   i. Product roadmap and plan
   ii. Proposed changes on architecture and application landscape
   iii. Report of innovation in technology
   iv. DRICA
d. Minutes: PMO Coordinator
e. Frequency: The Technology and Risk Management Meeting should be held quarterly unless otherwise agreed between the Parties.

5.7 Operational Meetings

The Operational Meetings are ad hoc meetings held between the relevant Parties to assess technology specific issues: e.g. testing, availability and configuration of environments, security, integration, configuration and customisation issues, etc.

Attendees are the SME's and, depending on the nature of the issue being discussed, may also require the involvement of the Release Project Managers and other key personnel.

No commercial matters are discussed at this level as attendees are not involved in financial / contractual management.

5.8 Project Management Forum

The Project Management Forum Meetings are meetings held fortnightly between the ROC Technology and Contractor Release Project Managers. This meeting is a discussion forum for the project managers on the ROC Technology Program to share understanding and issues and ensure alignment of project management activities across the Program.

a. Attendees:
   i. From the Customer: The ROC Technology Release Project Mangers
   ii. From the Contractor and Other Contractors: Release Project Managers
b. Agenda includes:
   i. Master Schedule overall
   ii. Potential blockers, emerging issues, threats
   iii. Relationship Management
   iv. Lessons learnt, good practice share
   v. Collegiate advice
   vi. Future horizon planning
d. Material: The material is as required to support the subjects being discussed
e. Meeting Minutes: There are no minutes however action items are taken and distributed
f. Frequency: fortnightly.

6 Governance Structure (Technical Governance)

6.1 Contractor (SI) and Other Contractors

6.1.1 The Contractor (SI) is the Customer's agent responsible for delivering the ROC Solution. Technical Governance between the Contractor and Other Contractors, as well as the Contractor and the Customer is as described in the following diagram.

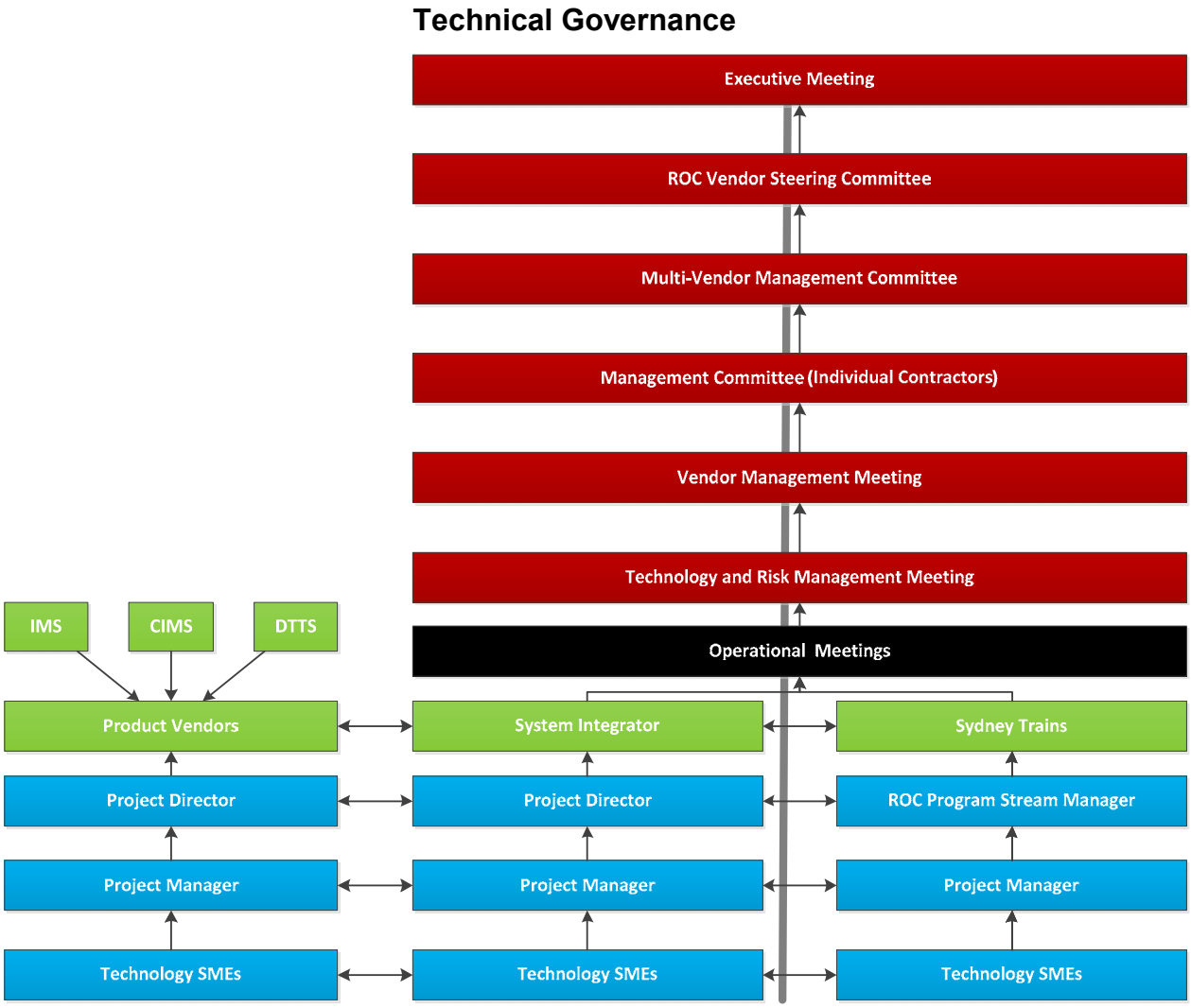

Diagram 1: ROC Technical Governance Diagram

Colour coding for the diagram above:

a. Red cells identify the relevant meetings in order of descending significance

b. Black cell is not subject to the formal governance process but included by reference in this document.

c. Green cells identify the relevant organisation

d. Blue cells identify the relevant role within the organisations.

6.1.2 The vertical cells establish the logical workflow between the Contractor and the Other Contractors, as well as the Contractor and the Customer.

6.1.3 The horizontal cells establish technical counterparts in increasing levels of significance.

6.1.4 The delineation of responsibility is exhibited by the black line between the Customer and Contractor. The purpose is expressly designed to provide a visual representation of the Systems Integrator model engagement.

6.1.5 This is reinforced by the fixed engagement lines between the Contractor and Other Contractors technical counterparts, and the line between the Contractors and the Customers technical counterparts. This serves to demonstrate that the Contractor may directly engage the Customers technical personnel during the program, however the technical relationship for product vendors only extends to the Contractor.

7 Governance Structure (Commercial Governance)

7.1 Commercial Governance

7.1.1 While the Contractor (Systems Integrator) is the Customer's agent responsible for delivering the ROC Solution, commercial matters are expressly excluded from the scope of managing the Other Contractors in order to ensure confidentiality of the Other Contractors' commercial affairs.

7.1.2 Commercial Governance between the Parties is therefore dealt with individually between the Customer, the Contractor and the Other Contractors as illustrated in the following diagram.

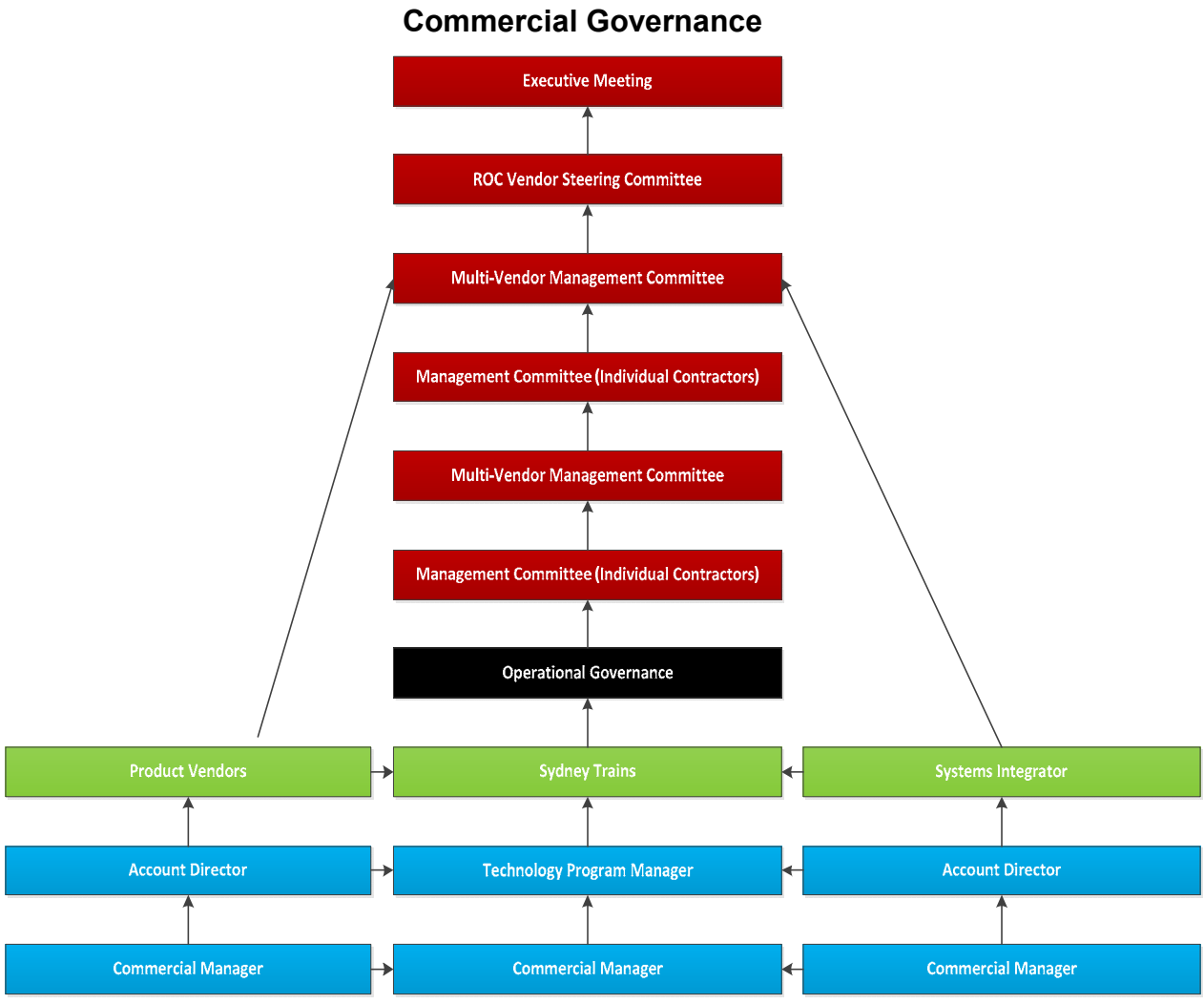

Diagram 2: ROC Commercial Governance Diagram

7.1.3 Colour coding for the diagram above:

a. Red cells identify the relevant meetings in order of descending significance
b. Black cells are not relevant to Commercial Governance
c. Green cells identify the relevant organisation
d. Blue cells identify the relevant role within the organisations.

7.1.4 The vertical cells establish the logical workflow within the relevant organisation. Note the separation of the Contractor and the Other Contractors.

7.1.5 The horizontal cells establish commercial counterparts between the Other Contractor and the Customer and the Contractor and the Customer.

7.1.6 Commercial discussions bypass the operational meeting and vendor management meeting as these involve non-commercial attendees.

7.1.7 Discussions relating to commercial issues should occur at the Management Meeting as:

a. Meetings are between the Customer and individual contractors to ensure confidentiality of their information.

b. The absence of other Contractors promotes an open and frank exchange of views between the parties, including highlighting any issues any Contractor may have with another Contractor.

8 Contractor's Key Roles in the Governance Structure

8.1 Overview

The Contractor shall provide the following key roles in the joint governance structure:

a. Managing Director

b. General Manager

c. Account Executive / Client Relationship Manager

d. Service Delivery Manager / Project Director

e. Account Executive / Client Relationship Manager

f. Commercial Manager

g. Project Manager

h. Lead Solution Architect.

The primary governance-related responsibilities for each key role are specified in sub-section "Key Roles and Responsibilities".

The Contractor shall appoint an individual for each of the roles above and one individual may not fulfil more than three of the roles above.

8.2 Key Roles and Responsibilities

8.2.1 Managing Director

The Contractor's Managing Director is responsible for all facets of the Contractor's performance, including service delivery, relationship management and finances. The Managing Director interfaces with the Customer's CIO.

8.2.2 General Manager

The Contractor's General Manager is responsible for the overall management of the relationship at the strategic and executive level as well as leadership of the service delivery team. The General Manager interfaces with the Customer's Program Director.

8.2.3 Account Executive / Client Relationship Manager

The Contractor's Account Executive will be responsible for the overall engagement with the Customer under this Agreement. The Account Executive will be the single point of accountability for the account and for all of the Services. The Account Executive works with the Customer's Technology Program Manager to align the delivery of Services with the strategic needs of the Customer, with focuses on performance, charges and contractual matters. The primary governance-related responsibilities of the Account Executive are:

a. Management of the executive relationship between the Contractor and the Customer

b. Management of the Contractor's delivery teams

c. Ensuring a successful relationship with the Customer

d. Overseeing that all performance requirements are satisfied as agreed in this Agreement

e. Ensuring proper invoicing and payments between the Contractor and the Customer

f. Overseeing all contractual related matters, e.g. change of service levels, etc.

g. Ensuring that the Contractor fulfils all of its obligations under this Agreement

h. Overseeing and being responsible for the successful completion of transition required to provide Services in this Agreement

i. Participating in the Customer's strategic planning process and developing recommendations and plans that support the Customer's strategic direction

j. Informing the Customer about relevant new corporate capabilities and developments within the Contractor's organisation and proposing ideas and solutions that may contribute to Continuous Improvement

k. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document.

8.2.4 Service Delivery Manager / Project Director

The Contractor's Service Delivery Manager has the overall responsibility of delivering the Services. The Service Delivery Manager works with the Customer's Technology Program Manager to manage and meet commitments, requirements and expectations regarding overall delivery, including scope and demand within the scope of the Services. The primary governance-related responsibilities of the Service Delivery Manager consist of:

a. Providing overall leadership and management of the Service delivery teams

b. Interfacing with and supporting the Customer organisation, which contributes to building a successful relationship between the Customer and the Contractor

c. Responsible for the appropriateness, quality and timeliness of all defined scope of Services and transition, and ensuring overall management of inter-service dependencies and issues

d. Monitoring and measuring of the Services from the Contractor to the Customer

e. Ensuring end-to-end responsibility of Maintenance, Service Request, and Enhancement activities to be delivered and/or maintained by the Contractor.

8.2.5 Account Manager / Client Relationship Manager

The Account Manager has primary responsibility for the administration and management of the Contractor's contractual compliance with the Agreement. The primary governance-related responsibilities of the Account Manager consist of:

a. Establishing and executing all required account and business management processes and associated reporting to meet the Customer's expectations

b. Ensuring that a log is updated and shared with the Customer containing names and contact information of personnel holding roles set forth in the PIPP.

c. Informing the Customer of important changes in the Contractor's resources that may have a material effect on the Services

d. Assisting the Account Executive in the resolution of contract disputes

e. Managing contracts and modifications, resolving all issues affecting the Services compliance

f. Ensuring the Contractor's fulfilment of its obligations under this Agreement;

g. Ensuring satisfaction of legal requirements

h. Advising management of contractual rights and obligations

i. Reviewing and facilitating the Contractor's approval of all contractual documents

j. Working with other relevant the Customer teams to ensure contractual requirements are met, including documentation and management of Service Levels

k. Providing information to the Customer as appropriate to facilitate the Customer understanding of the Contractor's new capabilities relevant to the Services

l. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document.

8.2.6 Commercial Manager

The Contractor's Commercial Manager has the overall accountability of the Contractor's contractual compliance with the Agreement. The primary governance-related responsibilities of the Commercial Manager consist of:

a. Working with the Customer's Commercial Manager to prepare, approve, and execute contract change orders, amendments, and modifications

b. Maintaining and updating issues and open actions log in order to track and facilitate resolution of all contractual issues and actions; performing escalations as required

c. Assisting in the contractual management of all new service offerings and related new Customer requirements so that they are properly reviewed, approved, executed, and integrated into the Agreement in accordance with the Contract Change Control Procedure in Schedule 3 of the General Order Form.

d. Maintaining an index of the pertinent parts of the Agreement, modifications and business agreements, contract correspondence and letters, and other agreed information and documentation pertinent to the Agreement

e. Managing contracts and modifications, resolving all issues affecting the Services compliance; ensuring the Contractor's fulfilment of its obligations under this Agreement; ensuring satisfaction of legal requirements; advising management of contractual rights and obligations

f. Run benchmarking exercises in cooperation with the Customer's Contract Manager (discretionary/infrequent activity).

8.2.7 Project Manager

The Contractor's Project Manager has the overall accountability of the performance of the Project team for the day-to-day running and delivery of the Project. The primary governance-related responsibilities of the Project Manager consist of:

a. Working with the Customer's Project Manager to ensure smooth day-to-day running and delivery of the Project

b. Managing project deliverables to schedule and budget, identify risks and mitigation strategies and report as required

c. Single point of contact to vendors for delivery including escalation point.

8.2.8 Lead Solution Architect

The Contractor's Lead Solution Architect has the overall responsibility and accountability of the architectural design of the ROC technology solution. The primary governance-related responsibilities of the Lead Solution Architect consist of:

a. Working with the Customer's ROC Technology Lead Architect to ensure a consistent approach to architectural design of the Technology component of the ROC Program

b. Working with and guiding the Contractor architects in defining the technology solution, specifically supporting the Solution and Integration Architects.

9 Customer's Key Roles in the Governance Structure

9.1 Overview

The Customer shall fulfil the following six key roles in the joint governance structure for the purpose of providing Services as per this Agreement:

a. Chief Information Officer

b. ROC Program Director

c. Technology Program Manager

d. ROC Technology Lead Architect

e. Commercial Manager

f. Release Project Manager

Each role can be conducted by one or divided into a small number of individuals. The Customer can decide if an individual shall conduct more than one role.

The primary governance-related responsibility for each key role is specified in Section "Key Roles and Responsibilities".

9.2 Key Roles and Responsibilities

9.2.1 Chief Information Officer

The Chief Information Officer is responsible for representing the Customer at Executive Meetings. The Chief Information Officer's key focus is on the strategic relationship with the Contractors in order to ensure the ROC Technical Solution is implemented in accordance with the Customers' operational and budgetary requirements.

9.2.2 ROC Program Director

The Customer Program Director is equivalent to the Contractor's General Manager and responsible at the strategic and executive level for management of the relationship. The Program Director shall:

a. Provide executive sponsorship of the strategic relationship

b. Communicate the Customer's IT strategy to the Contractor. c. Provide direction and leadership to the ROC Program's Stream Leads

9.2.3 Technology Program Manager

The Technology Program Manager is responsible for overseeing the delivery of Services by the Contractor. The primary governance-related responsibilities of the Technology Program Manager include:

a. Interacting with the Contractor's Account Executive

b. Providing management support and guidance to the Customer's governance organisation including removing obstacles that impede success in a timely manner

c. Where applicable, approving Service Credit and Incentive settlement. Approving and authorising the Contractor's invoices to the Customer

e. Ensuring the Customer meets agreed-upon deadlines

f. Providing strategic dispute resolution

g. Acting as the single point of contact for business users and gatekeepers for requests from business units

h. Supporting business units in clarification of ROC technology related issues

i. Working with the Contractor's Account Executive to revise scope of Services as required by the ROC Program

j. Reviewing key Risks and Issues

k. Approving prioritisation of Service Requests and Enhancements if needed.

9.2.4 ROC Technology Lead Architect

The ROC Technology Lead Architect is responsible and accountable for overseeing one or more Technology streams in the Project. The primary governance-related responsibilities of the ROC Technology Lead Architect include:

a. Working with the Contractor's Lead Solution Architect to ensure a consistent approach to architectural design of the Technology component of the ROC Program

b. Working with and guiding the Customer architects in defining the technology solution, specifically supporting the architects on the project: Solution, Infrastructure and Data Architects.

9.2.5 Commercial Manager

The Customer Commercial Manager has the primary responsibility for managing the commercial relationship, monitoring the Contractor's commercial performance against the Agreement and ensuring contract compliance. The Customer Commercial Manager shall work with the Contractor's Account Manager and Commercial Manager to achieve the goals and objectives of the contract regarding vendor management. The primary governance-related responsibilities of the Contract Manager include:

a. Interfacing with the Contractor's Account Manager and the Contractor's Commercial Manager counterpart

b. Extracting contract terms, Service Levels, and performance metrics that will be monitored and reported

c. Establishing the Customer's contract governance policies, procedures, tools, and templates

d. Ensuring internal stakeholder and the Contractor's awareness of and compliance with the Customer's contract governance framework

e. Regularly reviewing the Contractor's performance against the Agreement

f. Ensuring receipt of all reports from the Contractor as agreed in the Agreement.

g. Ensuring that a log is at all times updated and shared with the Contractor containing names and contact information of the Customer personnel holding contractual roles set forth in this schedule

h. Participating in negotiations for updates to the Agreement

i. Performing compliance oversight and review of the contractual elements defined in the Agreement, working with the Customer management and others to address and resolve compliance issues

j. Resolving escalated issues in accordance with Section "Issue Escalation Process" in this document

k. Review invoices and resolve any charge related issues with the Contractor's Account Manager

l. Coordinate benchmarking exercises (discretionary/infrequent activity)

m. Drafting amendments to the Agreement, including socialisation with the relevant internal and Contractor stakeholders.

n. Ensure approval of contracts and amendments in accordance with the Customer's policies and procedures, applicable laws, the Customer requirements in accordance with the Contract Change Control Procedure of Schedule 3 of the General Order Form

o. Reviewing the Contractor's performance to contract regarding Service Levels, Service Level Credits and any Service Level rebates.

9.2.6 Release Project Manager

The Customer Release Project Manager is responsible for the day-to-day running of the Customer side of the Project and for overseeing the delivery of the Project by the ROC Program Streams and the Contractor. The primary governance-related responsibilities of the Project Manager include:

a. Interacting with the Contractor's Project Manager

b. Providing management support and guidance to the Customer's governance organisation including removing obstacles that impede success in a timely manner

c. Ensuring the Customer meets agreed-upon deadlines at the Project level

d. Working with the Contractor's Project Manager to manage scope, schedule and budget

e. Identify Risks and mitigation strategies.

10 Issue Escalation Process

10.1 General

10.1.1 The Parties agree to implement and adhere to a defined escalation process for issues that arise regarding management of service delivery issues and the overall governance of the relationship.

10.1.2 Prior to a Party initiating the Escalation Process, the Parties should ensure all reasonable endeavours are undertaken to resolve the Issue at the technical level between the Contractor and the Customer's personnel, or between the Contractor and Other Contractor's technical-level personnel.

10.1.3 In the event that an Issue involves an Other Contractor, and is of a specific commercial nature, the escalation path should exclude the Contractor (System Integrator).

10.1.4 The Parties shall resolve issues in a constructive way that reflects the concerns and commercial interests of each Party. The Parties' primary objective and intent is to ensure that sufficient effort is made to have issues resolved by the appropriate levels of authority as soon as possible without the need for escalation.

10.1.5 In the event the Parties cannot reach a resolution of an issue at a given level, the Parties shall follow the Escalation Procedures, in terms of Notification, Documentation, and Request for Meeting, Escalation Path, and Issue Review as set forth in Section "Escalation Path".

10.2 Escalation Procedures

10.2.1 Notification

a. Either Party may decide that escalation is desirable when resolution of an issue appears unachievable at the current management level. In that event, the Party desiring escalation provides written notice of its intention to the member(s) of the other Party currently involved in the dispute.

b. At either Party's request, the Parties currently engaged in attempting to resolve the issue shall meet again to attempt resolution of the issue prior to escalation to the next level. When and if the issue cannot be resolved at the current management level, the issue will then be escalated after good faith attempts by the Parties to resolve the issue at the current level. However, at any time five days or more after an issue has been escalated to one of the levels in Section "Issue Escalation Path", a Party may, by notice to the other party, escalate it to the subsequent level.

10.2.2 Documentation

a. The Parties will jointly develop a short briefing document called Statement of Issue for Escalation that describes the issue, relevant impact and positions of the Parties. – Imola to check with Bon whether a separate document template is required for this "Statement of Issue for Escalation"; Kelly had provided an example template to use, should Bob wish to review that (raised by Kelly since this item is referenced in capitals).

b. Documentation shall be prepared with the sufficient basis for an appropriate consideration and conclusion.

10.2.3 Request for Meeting

a. A meeting will be scheduled with appropriate individuals with written notice. Parties will endeavour to meet as soon as possible, however no more than five (5) days from notification.

b. The Statement of Issue for Escalation will be sent in advance to the participants.

10.2.4 Escalation Path

The following diagrams depict the escalation paths based on the nature of the engagement with the Contractor. These are:

a. Systems Integrator and the Customer; and

b. Systems Integrator and the Other Contractors.

System Integrator (Contractor) / Sydney Trains (Customer) Escalation Path

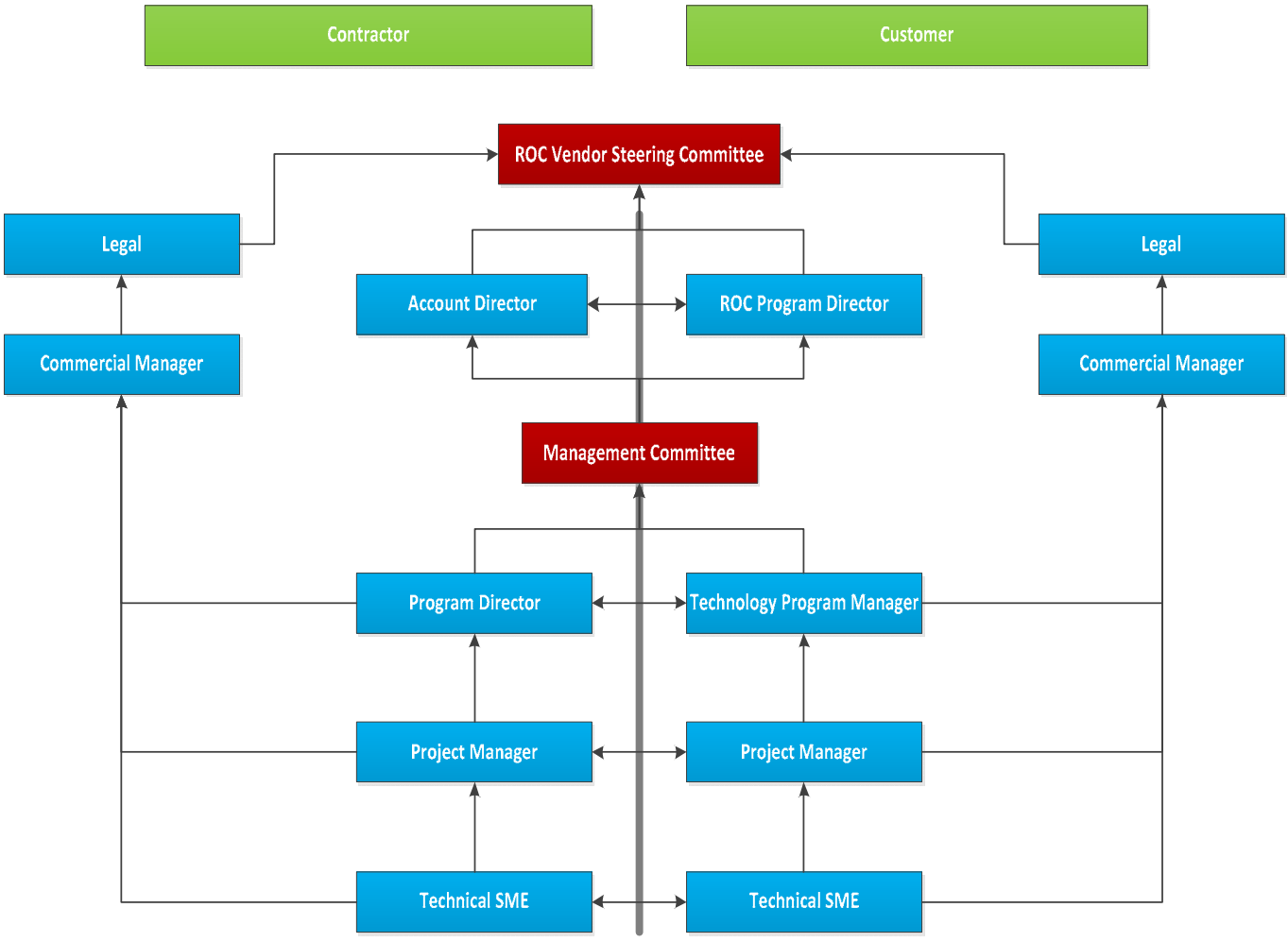

Diagram 3: System Integrator ("Contractor") / Sydney Trains Escalation Path Diagram

Systems Integrator (Contractor) / Vendor (Other Contractor) Dispute Escalation Path

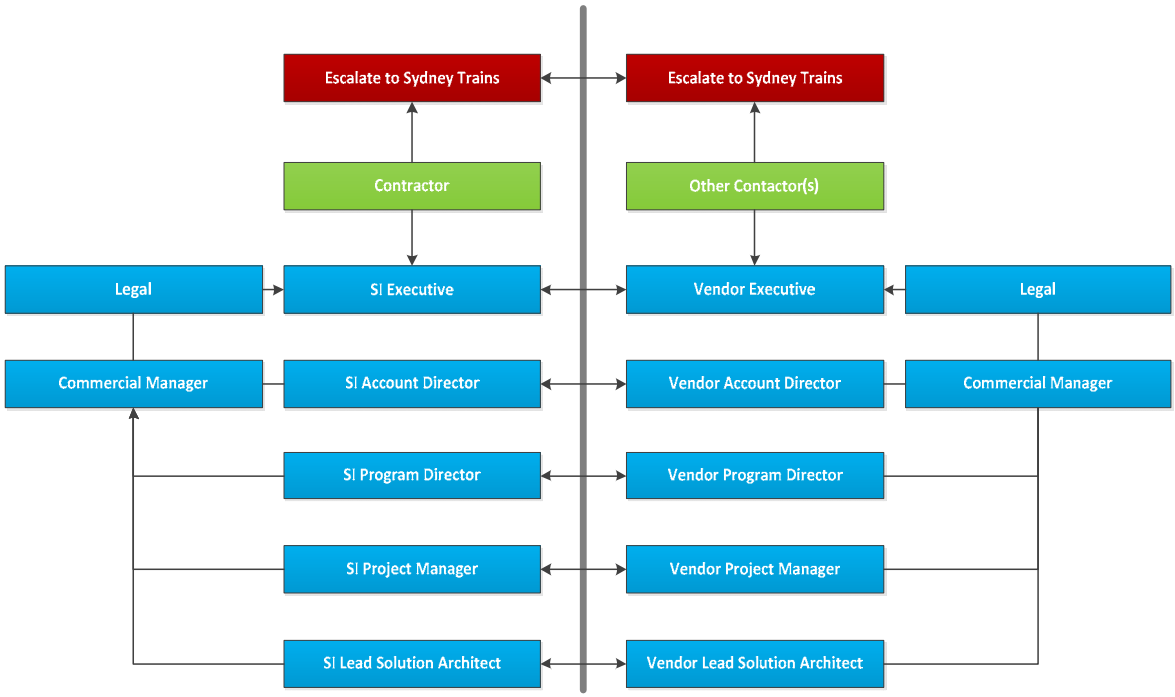

Diagram 4: Systems Integrator (Contractor) / Vendor (Other Contractor) Dispute Escalation Path

10.2.5 Issue Review

Each individual manager and process owner shall try to resolve any issues with their counterpart. If no agreement is made, the Parties should follow, wherever practicable, the above escalation path which attempts to resolve the issue at the counterpart level. From individual manager and process owner there are the following forums.

10.2.6 Technical Level

Wherever practicable, issues should be resolved at the technical level prior to escalation to the Vendor Management Meeting. The exception to the rule is instances where the discussion has the potential to have a quality, schedule or commercial impact. The following should be considered:

a. Is it a technological issue related to the Contractor's product or their performance?

b. Has the Customer contributed to the issue in terms of non-performance, delays in providing CSI, or failure to manage 3rd parties?

c. Is the Issue attributable to limitations of the Customer's technological environment?

d. If the issue cannot be resolved, it shall be treated according to the following contractual profile:

   i. Technological or delivery related issues should be escalated to the Vendor Management Meeting

   ii. Matters of a Commercial nature should be escalated to the Management Committee meeting.

10.2.7 Vendor Management Meeting

Escalation to the Vendor Management Meeting is only appropriate if the Parties have exhausted all options at the Technical level. Attendees at the Vendor Management Meeting shall investigate the issue and make their determination based on, but not limited to, the following considerations:

a. Is the issue attributable to lack of clarity of scope?

b. Was the issue a foreseeable event?

c. Is it a technological issue related to the Contractor's product or their performance?

d. Has the Customer contributed to the issue, in terms of performance, or technological limitations?

10.2.8 Management Committee Meeting

The Management Committee Meeting is the forum to discuss commercial issues escalated by a Party. Attendees at the Management Committee Meeting shall investigate the issue and make their determination based on, but not limited to, the following considerations:

a. Is the issue attributable to lack of clarity of scope?

b. Is this a technological issue?

c. Does the Contract support a particular Contractor's position?

d. Was the issue a foreseeable event?

e. Does the issue relate to partial or substandard performance by the Contractor and/or the Customer?

f. Has the Customer provided all necessary assistance, information, etc. to enable the Contractor to perform their work?

g. Has an Other Contractor contributed to the issue?

If the issue cannot be resolved, it shall be escalated to the ROC Vendor Steering Committee for final determination.

10.2.9 ROC Vendor Steering Committee

The ROC Vendor Steering Committee is the forum to discuss all outstanding technological, relationship or commercial issues escalated by the Management Committee Meeting. Unless it is unequivocal as to which party bares sole responsibility for an issue, the attendees' focus at the ROC Vendor Steering Committee should be to attempt to resolve the matter in a way that is conducive to the commercial interests of all Parties.

10.2.10 Issue Documentation after Resolution

a. Resolution of an issue must be documented and executed as a statement of fact. The documentation should additionally identify what further actions will be required to prevent reoccurrence: for example, changes in processes, contract variation etc.

b. Copies of the Issue Documentation must be retained in the shared document repository.

10.3 ROC Culture and Behaviours

The ROC Program adheres to the following meeting rules or "etiquette"[1]:

ROC Culture and Behaviors	
Meeting Etiquette **...** *ensuring meetings are efficient, collaborative & innovative*	
You should expect …	**You should challenge …**
An agenda and purpose for the meeting should be clear in the invitation (plus any pre-reading if possible).	Meetings without precise purpose and direction which linger and do not achieve an outcome.
Meetings invitations to be sent and responded to in good time.	People tentatively accepting or declining a meeting invitation without providing a reason.
Scheduled breaks for longer meetings, so e-mails and phone messages can be checked.	People 'reading under the table', scrolling through emails, texting, internet surfing, etc... ***Note**: if this happens, perhaps the meeting is not focused enough, or the wrong people are there*
People arriving early so meeting can start on time.	People arriving late, expecting others to brief them. ***Note**: if you miss part of the meeting, you lose your right to complain later about decisions made*
Mobile phones turned to silent. 'Only step out for extraordinary calls.	Use of mobile phones which distract meetings.
Comments to be held until the speaker finishes, however legitimate interjections and clarifications should be made appropriately.	Interruptions that are not constructive or on topic.
Being respectful of all inputs, feedbacks, opinions – even if they challenge the status quo.	Input that isn't made constructively.
People using 'I statements' to share their experiences with frank, honest and powerful words.	People starting statements with 'they', 'we', 'you', or otherwise trying to speak on behalf of groups not in the room.
A meeting to finish at least 5 mins before the allotted time; allowing others to get to next commitments on time	Meetings that extend past the time allotted or make you late for your next commitment.
Your Challenge: ***Can you achieve your objectives and reduce meeting time?***	

[1] Reference - Sydney Trains document: *ROC Meeting Etiquette Poster.docx*

11 Stakeholder Engagement Matrix

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
Meetings	**Executive Meeting**	The Executive meeting is the forum from which executives from Sydney Trains and the Systems Integrator discuss the progress of the project and potential future opportunities.	- CIO (Chairman) - General Manager (relative Business) - ROC Program Director (supports the CIO).	- CEO - CIO - Senior Account Manager, or "C" level representative	i. Resolution of risks and issues related to the overall relations between the Customer and the Contractor ii. Overall performance against business goals iii. Where applicable, revision of goals and long term plans for development of the relationship iv. Identify and discuss joint strategic business direction and opportunities v. As the highest level on the escalation path. Act as the ultimate point of joint dispute resolution.	i. Meeting Agenda ii. Minutes of previous meetings iii. ROC Vendor Executive Pack documenting contract performance iv. Recommendations as escalated from the ROC Vendor Steering Committee v. Critical Risk and Issues derived from the Risk and Issues Register vi. Decision log	Contractor 48 hours	Annually
	ROC Vendor Steering Committee	The ROC Vendor Steering Committee is the primary focal point for executive and strategic decisions, as well as the escalation point for resolution.	- CIO - GM Strategic Procurement - ROC Program Director The following report into this meeting: - Commercial Manager - ROC Program Stream Manager	- GM responsible for Account, or "C" level representative The following report into this meeting: - Project Director	i. Project update ii. Strategic direction of the ROC Program iii. Status of the relationship between the Parties iv. Project budget / incentive opportunities v. Future opportunities associated with the ROC Program and Sydney Trains in general vi. Escalated risk raised by the Management Committee	i. Meeting Agenda ii. Minutes of previous meetings iii. Joint DRICA ("A" and "B" risks only)	Contractor 48 hours	Monthly
	Multi-Vendor Management Committee	The Multi-Vendor Management Committee deals with governance between all Parties to the ROC Program and as a consequence, expressly excludes discussions relating to commercial matters of any party: e.g. Contractors financial affairs, product strategic direction, IP etc.	- ROC Program Director - Technology ROC Program Stream Manager - Commercial Manager NOTE: Attendees should not be Vendor Management Meeting attendees	- Senior Account Manager - Program Director NOTE: Attendees should not be Vendor Management Meeting attendees	i. Project status and update ii. Schedule Management iii. Relationship Management iv. Proposed efficiencies / business improvement v. Future scope opportunities associated with the ROC Program vi. Escalated risk raised by the Governance Meeting vii. General business	i. Meeting Agenda ii. Minutes of previous meetings iii. Joint DRICA ("A" and "B" risk only)	Contractor 48 hours	Quarterly / ad-hoc as required
	Management Committee (Individual Contractors)	The Management Committee (Individual Contractors) conducts governance on a managerial level and is primarily focused on ensuring vendor performance, relationship management and commercial performance, including change requests, invoices, service credits and incentives.	- ROC Program Director - ROC Program Stream Manager - Commercial Manager NOTE: ROC Release Project Managers (reports into this meeting)	- Senior Account Manager - Program Director NOTE: Contractor Release Project	i. Project status and update ii. Schedule Management iii. Commercial Management iv. Relationship Management v. Proposed efficiencies / business improvement vi. Future scope opportunities associated with the ROC Program vii. Escalated risks raised by the Multi-Vendor Management Meeting viii. General business	i. Meeting Agenda ii. Minutes of previous meetings iii. Project Status Update Pack iv. Joint DRICA ("A" and "B" risks only)	PMO Representative 48 Hours	Monthly

Communication Plan

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
				Managers (reports into this meeting)	All of the above is included in a pack with the status update and prepared by the vendor			
	Vendor Management Meeting	The Vendor Management Meeting focuses on the overall service delivery of the Contractor and Other Contractors. Vendor Management Meetings should be conducted by the Project Managers. Issues to be discussed include: progression of the relative stream, service delivery, quality, issue clarification and resolution etc. No commercial matters are discussed at this level due to the involvement of a number of different vendors.	- ROC Release Project Manager (relative) - Technology Architect or nominated delegate	- Release Project Manager - Project Coordinator - Nominated technology SME	i. Performance against the schedule ii. Proposed scope changes iii. Deliverable status, including acceptances iv. Resource planning v. Customers CSI compliance vi. Risks and Issues vii. Escalation points for Management Committee Meeting	i. Meeting Agenda ii. Minutes of previous meetings iii. Project Highlight Report iv. Risk and Issues derived from the Risk and Issues Register	Contractor 48 hours	Weekly
	Technology and Risk Management Meeting	The Technology and Risk Management Meeting is the forum to discuss and provide recommendations on IT architecture, standards, and all aspects of risk management and IT security.	- ROC Technology Lead Architect - Technology Program Manager - ROC Release Architect - Relevant Release SMEs	- Program Director - ROC Release Architect - Relevant SMEs	i. Review and propose technology directions, standards and architecture ii. Discuss and approve new and innovative services proposed by the Contractor iii. Discuss and review cross-vendor technology issues iv. Review impact of introducing applications into the legacy environment v. Propose changes to architecture and IT standards for approval by the Customer's architecture team vi. Review any proposals for reductions in the costs of the Services driven by new technology vii. Explore and understand innovations in technology that could enable business benefit for the Customer viii. Proactively propose, describe and plan innovation initiatives and provide innovation project recommendations to the Executive Level ix. Align security architecture, policy and operations x. Plan, review and monitor joint security initiatives and requirements xi. Evaluate risk management issues including both actual risks and contingencies xii. Evaluate recommendations in regard to proactive measures and remediation xiii. On request from the ROC Vendor Steering Committee investigate opportunities for innovation or other special tasks within that area xiv. Resolve any issues promptly and escalate if necessary in accordance with Section (Issue Escalation Process) in this schedule	i. Product roadmap and plan ii. Proposed changes on architecture and application landscape iii. Report of innovation in technology iv. DRICA	PMO Coordinator	Quarterly
	Operational Meetings	The Operational Meetings are ad hoc meetings held between the relevant Parties to assess technology specific issues: e.g. testing, availability and configuration of environments, security,	- Relevant SME's - Release Project Managers (o) - other key personnel (o)	- Relevant SME's - Release Project Managers	As Required	As Required	There are no minutes however action items are taken and	As required

Communication Plan

Type	Forum	Forum Description	Attendees (Customer [ST])	Attendees (Contractor [SI]/other)	Agenda	Material	Minutes	Frequency
		integration, configuration and customisation issues, etc. Attendees are the SME's and, depending on the nature of the issue being discussed, may also require the involvement of the Release Project Managers and other key personnel. No commercial matters are discussed at this level as attendees are not involved in financial / contractual management.		(op.) - Other key personnel (op.)			distributed	
	Project Management Forum	The Project Management Forum Meetings are meetings held fortnightly between the ROC Technology and Contractor Release Project Managers. This meeting is a discussion forum for the project managers on the ROC Technology Program to share understanding and issues and ensure alignment of project management activities across the Program.	- ROC Technology Release Project Managers	- Release Project Managers	i Master Schedule overall ii. Potential blockers, emerging issues, threats iii. Relationship Management iv. Lessons learnt, good practice share v. Collegiate advice vi. Future horizon planning	The material is as required to support the subjects being discussed	There are no minutes however action items are taken and distributed	Fortnightly
Reports	**Project Highlight Report**	Generated weekly per ROC Release and contains: Key Indicators (Project RAG Status); Milestone, budget and overall project update with particular explanations of any amber or red items; PIPP Deliverable updates; DRICA updates; Change Requests/updates & Action Items	- ROC Technology Program Manager - ROC T&C Program Manager - ROC Commercial Manager - SI Project Director - Customer and Contractor Release Project Managers - Customer and Contractor Lead Architects	- Release Project Managers - Release Team Members if/as required		PHR Report	PHR Report	Weekly
	Project Status Update Pack	Developed and presented during the Management Committee Meeting	Distributed to attendees of the meeting	Distributed to attendees of the meeting	Pack covers the following items: i. Project status and update ii. Schedule Management iii. Commercial Management iv. Relationship Management v. Proposed efficiencies / business improvement vi. Future scope opportunities associated with the ROC Program vii. Escalated risks raised by the Multi-Vendor Management Meeting viii. General business	N/A	PMO Coordinator	Monthly

Appendix K – Initial Requirements

Release 1

Frequentis Initial Requirements.pdf

Release 1-T2

The Initial Requirements for Release 2 – T2 consist of:

1) The Release 1 Detailed Design Documents; and
2) The requirements for REM2017.R2 set out in the table below.

Sydney Trains REM2017.2 Requirements			
Requirement		**Business Requirements 2017.2**	**In scope**
2Way SMS	2 Way SMS	The system shall provide a 2-way SMS capability to allow an incident responder to acknowledge that information has been received and confirm via a predefined numbered response that incident is being actioned accordingly.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they have accepted the task for actioning.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they have arrived at the designated location.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if the incident has been resolved.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they cannot accept the task due to being busy.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise that they have rejected the task.	Included
	2 Way SMS	The system shall provide the ability for an incident responder to respond to an incident alert and advise if they cannot accept the task due to being unreachable.	Included
Trip Number	Trip / Run Number format	The system shall adhere to both Sydney Trains Passenger Service and Freight Trains formats for Trip Numbers for all Delay Reports. Examples: • Sydney Trains: 22-A; 2—A; 22--; 2--- • Freight Trains: 4BM4 The required format is provided in the requirements	Included

		below.	
	Trip / Run Number format	The system shall adhere to both Sydney Trains Passenger Service and Freight Trains formats for Trip Numbers for all Notifications. Examples: • Sydney Trains: 22-A; 2—A; 22--; 2--- • Freight Trains: 4BM4 The required format is provided in the requirements below.	Included
	Trip / Run Number format	The system shall adhere to both Sydney Trains Passenger Service and Freight Trains formats for Trip Numbers for all Incidents. Examples: • Sydney Trains: 22-A; 2—A; 22--; 2--- • Freight Trains: 4BM4 The required format is provided in the requirements below.	Included
	Trip / Run Number format	The system shall provide the ability to enter alphanumeric characters (A-Z, 0-9) in the Trip/Run Number field.	Included
	Trip / Run Number format	The system shall provide the ability to enter multiple dash characters (-) into the Trip/Run Number field in any sequence.	Included
	Trip / Run Number format	The system shall ensure entry of alphabetical characters in the Trip/Run Number field is in uppercase.	Included
	Trip / Run Number format	The system shall ensure that other special characters (e.g. %, @,J, etc.) cannot be entered in the Trip/Run Number field, with the exception of dash character (-).	Included
Pop-ups Alerts	Duplicate Alert	The system shall alert the user if he/she is creating a new incident from a notification for which an incident already exists.	Included
UI	Incident update indication	The system shall visually indicate on the Incident Overview screen when an incident has been updated.	Included
Incident Ownership	Incident Ownership assignment	The ability to assign and change ownership of an incident throughout incident lifecycle. Rationale: Escalation is presented in REM COTS product via the "incident type". The system currently does not support a handover between incident managers. The system supports a single incident creator/ coordinator. Potential impacts to clear understanding of current incident managers and previous incident managers who may need to be contacted for further details on the incident (e.g. historical information recorded). May result in increased phone calls to determine who	Included

		is to be contacted.	

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
Detect				
IMS-CAP-001	The ability to integrate with various alarm sources, systems and technology to receive automated alerts. The type of automated alerts is to include but not be confined to: • Service delays received from DTTS, • Signal passed at danger, • Condition Monitoring, • Signal failure, • Points failure, • Overhead wiring failure, • Social media feeds, • Dwell time, • Section running time Lost, • Control system failure, • Technology failure, • Electrical failures / SCADA Network, • CCTV, • Alerts received from other incident management systems. Note: Please refer to NER for details on interfacing standards and technologies	**E**	Configuration	The product has a generic interface for creating incidents based on alerts raised from various upstream systems (e.g. asset monitoring, camera feed, incoming emergency calls, other incident management or condition monitoring systems). Incoming alerts are aggregated in a separate alert monitor view which allows users to create incidents or dismiss alerts.
IMS-CAP-002	The ability to create a network incident notice. Details to be captured for example are: • Issuers name, • Designation, • Contact details, • Relevant factual information, • Asset Information, • Weather (Forecast, actual, variance , actions).	**E**	Out of The Box	The product allows the generation of predefined reports and can export defined incident information to downstream systems as specified in IMS-CAP-044, IMS-CAP-045, IMS-CAP-046, IMS-CAP-047.
IMS-CAP-003	The ability to receive and input manual alerts. For example: • Phone call, • Text, • Email, • Web, • Mobile application. Phone calls are to be: • Recorded and entered into IMS, • Directed to the appropriate staff member. Note: All manually captured information is to be captured as structured data, this may involve prompts and human interaction.	**E**	Configuration	Users can create new incident records based on manual alerts received. Manually captured information can be filled out in the corresponding data fields, while unstructured data can be correlated to incidents as file attachments. REM supports integration with voice recording systems.
Record and Assess				
IMS-CAP-004	The ability to receive Network Incident Notices. For example: A network Incident Notice must be issued as soon as possible when an incident occurs on the rail network, and involves: • Actual or potential loss of life or injury, • Actual or potential damage to or defect in network infrastructure, • Damage to or defect in rail traffic, • Breach of Network Rules or Network Procedures.	**E**	Configuration	Network Incident Notices are treated and processed similarly to incoming alerts in the alert monitor view as specified in IMS-CAP-001, allowing the user to create an incident record based on the Network Incident Notice.
IMS-CAP-005	The ability for users to search and filter alarms. For example filter by: • Type of alarm, • Location of alarm, • Time and date of alarm.	**E**	Configuration	The alert monitor view allows users to filter alerts by type/source, location, time/date.
IMS-CAP-006	The ability to supress automatically created alarms. For example suppress automatically generated alarms, including but not limited to: • all persons/departments (e.g. false alarms), • by individual alarm instance, alarm type and/or department, • during shunting operations, • during manual proceed authorities (non-signalled movements).	**E**	Customisation	The suppression of alarms from alarm source types, e.g. CCTV, or specific sources e.g. a concrete CCTV camera can be configured. The suppression can be configured for a limited time interval. The display of alarms coming from certain alarm source types can be suppressed by the administrator for all users / roles.
IMS-CAP-007	The ability to manually create and update incident records. For example incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	The creation and management of incident records is one of the product's key capabilities. Incident records can follow a predefined template, or follow a configurable workflow consisting of configurable checklists and functional modules.
IMS-CAP-008	The ability to automatically create and update incident records based on predefined business rules. Incident records are to be: • Assigned a unique identifier, • Brief title / heading. Incident records are to be either: • Built from scratch or, • Follow predefined templates.	**E**	Out of The Box	A newly raised incident is automatically provided with a unique identifier. A title can be suggested based on the incident category, location, Incident ID or other criteria. See IMS-CAP-007 for predefined and custom incident templates.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-009	The ability to automatically record incident details. The details and business rules required to automate the capture of incident details need to be configurable. For example details captured may include: • Users name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (Location of train, geographic location etc.), • Reporting system, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers), • Reference data, • Weather, • Events near by. Note: The details required will change based on the type of incident being recorded. It is envisaged that automatically created incident records will require some level of manual input to capture data elements which are not provided by other integrated systems.	**E**	Configuration	Incident details can be automatically filled or updated based on business rules, e.g. incident type, location and priority based on the alert source; weather data from an external service, affected services based on the incident location and impact etc.
IMS-CAP-010	The ability to manually record incident details. For example user may be prompted as to details required based on: • Users role (by either selecting from list or manually typing), • Type off Incident. Incident details may include: • Users Name, • Title & description, • Priority, • Type of incident (Infrastructure, Electrical, Security etc.), • Date & time of Incident, • Location (can be location of train, geographic location etc.), • Reporter, • Category and sub-category (e.g. Category of 'Passenger on train' sub-category 'Passenger fainted on train'), • Services effected (i.e. run numbers) • Reference data • Weather, • Events near by. Note: The details required will change based on the type of incident.	**E**	Out of The Box	Incident details can be captured manually. The specific details are configurable for different incident templates. The product allows the recording of incident details as combo boxes or dropdown lists, radio buttons or checkboxes and text boxes.
IMS-CAP-011	The ability to correlate multiple incident records into a single incident record. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	Out of the box: The product allows the creation of a master incident record for aggregating separate incidents that are tied to or caused by the same event. Duplicate incident records can be cancelled without loss of lawful recording information. Customising: Rules for merging of incidents have to be elaborated together with the customer.
IMS-CAP-012	The ability to prompt users in the correlation incident records based on predefined business rules. For example: • Ability to consolidate many incident records into a single incident record, • All original incident ID's are to be store for reference purposes, • Merge / consolidate without any loss of data.	**E**	Customisation	It is possible to identify incidents that are potentially tied to or caused by the same event based on predefined business rules, such as correlating incident location and category for incidents within a certain configurable time frame.
IMS-CAP-013	The ability to receive a list of affected train services in real time from an external system and associate these with an incident. For example: • Receive a list of affected services associated with a single incident, • Impact the incident had on each service, • The number of passengers travelling on each service, • The time in which the service returned to planned stopping times.	**E**	Configuration	The affected train services can be acquired from the DTTS in real time and can be referenced to the IMS incident. REM out of the box contains an interface to Thales Aramis-D.
IMS-CAP-014	The ability to easily indicate the impact an incident is having on services either manually and / or automatically. For example users may be prompted / supported by the system to capture impact details. Impacts could be to: • Specific runs, • Runs on a line, • Runs passing through a stations, • Cross modal transport, • Stations. Types of impact will include: • Delays, • Cancellations, • Altered stopping patterns, • Change route, • Alternative transport.	**E**	Configuration	The impact of an incident on services can be determined in conjunction with interface data from the DTTS. Out of the box, REM contains an interface to Thales Aramis-D.

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-015	The ability to retrieve asset information from an external system in real time. For example: • Sets, • Stations, • Lines, • Overhead wiring, • Signals, • Points, • Assets maintenance schedules (Over due, next planned etc.).	**E**	Customisation	Asset information can be retrieved from an external ERP solution (Ellipse, SAP).
IMS-CAP-016	The ability to view the availability of incident response personnel. For example: • View availability of staff already in operation, • View the availability of standby crew or response personnel, • View the capabilities of crew (i.e. trained to operate which set types), • View contact details, • View current location of staff in operation. Note: Requirement linked to IMS-CAP-026	**E**	Customisation	The product provides a checklist view which allows the assignment of action items to selected personnel. The user is prompted with a selection of incident response personnel, along with contact details, each flagged as available or unavailable. The crew capabilities can be stored as (an) additional attribute(-s) or linked documents. The response team has to acknowledge or deny the task assignment and report the completion of the task. The current location of response teams can be determined by devices allowing GPS tracking. Those devices are not part of the product. Using GPS tracking devices to localize personnel may lead to legal issues.
IMS-CAP-028	The ability to assign / action response team / personnel. For example: Provide assignee with visibility of: • Competence, • Availability of response teams, Provide response teams with: • Notification of action including all details required (fault type, location etc.), • Ability to accept / reject action, • Provide checklist of actions to address.	**E**	Customisation	The assignment of action items to response teams is described in the requirement IMS-CAP-016. Response teams can be provided with incident information and checklists containing action items using the product's Mobile Client. The Mobile Client allows the user to accept or reject actions. Furthermore, incident information can be distributed using the product's outbound communication channels as specified in IMS-CAP-025
IMS-CAP-017	The ability to identify the location of an incident on a geospatial view. For example: • Incidents location in relation to rail network assets, • Location based on the geospatial coordinates of the incident, • Street view, • Aerial view, • Terrains view, • Mark up map with location / notes, • Ability to geo reference, • Identify site / incident access points etc.	**E**	Out of The Box	The location of an incident can be identified and displayed in the integrated GIS View. Additional layers containing rail specific information (e.g. assets, access points, railway tracks and stations,..) or general information (street and terrain view) can be displayed in the GIS View. The integrated GIS view allows the user to automatically focus on the entered incident location.
IMS-CAP-018	The ability to manually add an estimated recovery time to an incident record. For example: • Estimated recovery times, • Estimated response times. Note: This estimate may be based on historic data or user knowledge.	**E**	Out of The Box	It is possible to set estimated response and recovery times for incident records.
IMS-CAP-019	The ability to automatically add an estimated recovery time to an incident based on configurable business rules. For example: • Estimated recovery times, • Estimated response times. Note: It is envisaged these automated estimations will be applied based on historic data.	**E**	Customisation	The product allows a basic configuration of business rules based on a defined number of incident details (e.g. type, weather condition) that automatically add an estimated response and recovery time for incident records.
Select / Define and Activate Response Plan				
IMS-CAP-021	The ability to initiate a workflow in response to creating an incident record. For example: • Initiate relevant workflow / response plans.	**E**	Out of The Box	The product allows the initiation of workflows based on defined business rules. For example, alerting of internal and external response teams, assigning tasks to response teams or an automated information of affected Rail Undertakings.
IMS-CAP-022	The ability to initiate manual predefined response plans. For example: • Provide plans to support Train Controllers or incident personnel in decision making. • Initiate alternate transport plans.	**E**	Out of The Box	Predefined response plans can be initiated as workflow-based checklists that allow the distribution of information to the involved parties.
IMS-CAP-023	The ability to create and initiate ad-hoc response plans. For example: • Create plans to respond effectively to rare / unusual incidents.	**E**	Out of The Box	Custom action items can be added to the checklist during the resolution of the incident. Each action item has a fixed set of attributes (Title, Description, Assignee, Timestamp/Range, Priority). Additionally, REM supports merging response plans for different types of incidents to cover rare and unusual incidents.

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-025	The ability to provide notification services to selected personnel For example: • Push based notifications, • Pull based notifications, • Subscription based notifications, • Push media update. Manage notification distribution lists and groups and business rules: • Create, • Read, • Update, • Delete, • Notifications to be distributes in near real time. Note: Notification may include notifying crew / operational staff of CAN warnings (Condition Affecting Network (i.e. Temporary Speed Restrictions) Notifications will also be distributed to management/ executives and other 3rd parties.	**E**	Out of The Box	Outgoing notifications can be manually or automatically sent to various channels, i.e. Short Message Service, email, Voicemail or as push/pull based notification. REM includes a configurable rule engine that determines who has to be informed about which incidents, and using which communication channel. Notification distribution lists can be configured.
IMS-CAP-026	The ability to track and display the location of all response teams / personnel: For example: • Location indicated on a map / geospatial display, • Roster information, i.e. the availability of team / personnel, • Current list of assigned actions assigned. Note: Requirement linked to IMS-CAP-016	**E**	Out of The Box	The integrated GIS View, automatically focusses on the incident location and displays the location of response teams associated data (assigned actions, roster information) in a dedicated layer.
IMS-CAP-027	The ability to view a current list of consumables that a teams / personnel are in possession of. For example: • Consumables required to fix / address a fault, • Tools required to fix / address a fault, • Vehicle type (specific vehicle type may be required to access a fault), • Historical analysis.	**E**	Customisation	The product is capable of displaying specific information (e.g. consumables, tools,…) about incident teams, retrieved from an external source system.
IMS-CAP-029	The ability for mobile personnel capture incident details when responding to a incident. For example: • Response teams capture and provide more details (via forms and checklists), • Reponses teams are able to view the latest details / information captured by other staff members.	**E**	Out of The Box	Response teams can be provided with a mobile client of the product that allows the capturing of incident details.
IMS-CAP-030	The ability to create predefined workflow / check lists for different types of incidents. For example different types of incident groupings will include: • Equipment, • Miscellaneous, • People, • Trains, • Weather Conditions. Note: Different types of incident will require involvement from different personnel and 3rd parties. Ability to: • Create, • Read, • Update, • Delete.	**E**	Out of The Box	Incident categories, workflows and checklists are configurable. Access rights for checklist items can be configured.
IMS-CAP-031	The ability to assign an incident actions manually and / or automatically. For example: Assign incident actions to a: • Business group / division, • Individual staff member. Assigning Incident records / actions to be: • Manual and / or, • Automated based on predefined criteria / metadata. Note: It is envisaged that workflow will have predefined actions and potential business groups / divisions responsible for them however this requirements allows for additional actions to be assigned.	**E**	Customisation	The product allows a rule based or manual assignment of incident actions to selected personnel. Incidents can be assigned to users or roles (corresponding to divisions). A filter functionality allows users to see incidents assigned to them.
IMS-CAP-032	The ability to manually override / skip workflows and checklists. For example authorised user able to depart: • Predefined Workflow, • Predefined Activity, • Predefine Checklist.	**E**	Out of The Box	The product allows workflows, activities and checklists to be skipped or processed in an arbitrary order unless mandatory for the completion of the workflow.
IMS-CAP-033	The ability to manually re-assign a workflow activity to a different individual or role. For example: • Initial assigned user unable to action task.	**E**	Out of The Box	The responsibility for the workflow activity can be changed to a different individual or role.

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-034	The ability to distribute response plans to selected personnel electronically. For example via: • Web based application • Mobile application. **Note:** It is envisaged that distribution business rules would be managed as part of workflow.	**E**	Out of The Box	Response plans can be distributed to selected personnel by various communication channels or a web/mobile client.
IMS-CAP-035	The ability to provide a collaborative working environment in which multiple user will have the ability to simultaneously access and update incident details in real-time. For Example internal and external users provided with: • Visibility of incidents via multiple mechanisms: • Video, • Conferencing (calling and video), • Web, • Application based, • Notification, • Phone, • Mobile App, • Ability to provide input / suggestions. These would be managed through role based permissions. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan • Red indicates that required actions for the incident are not tracking to the response plan.	**E**	Out of The Box	The product allows multiple users to simultaneously access and update incident details. Incident information can be made available in the web and mobile client or distributed as outlined in IMS-CAP-025 (Short Message Service, email, Voicemail or as push/pull based notification). An incident overview allows users to track the progress of multiple incidents, allowing a graphical representation as traffic lights.
Track and Escalate				
IMS-CAP-038	The ability to record action(s) within an incident record. For example record action information such as: • Calling emergency services, • Calling operational staff, • Timestamps. The status of an action is monitored on its own and as part of the overall workflow, including but not limited to: • Overall status, • Time-forecast to complete, • Action completed, • Action authorisation (whom, when etc. where applicable), • Incidents and actions are tracked until completion, • Critical issues, • Constraints & Dependencies.	**E**	Out of The Box	Every single action for incident handling is logged and flagged with an automatic system timestamp, which cannot be overwritten. Additionally, the user can manually set a timestamp for specific events during incident handling (which is tracked separately). Otherwise, the timestamp is automatically filled with the current time. The tracked information allows the monitoring of the incident's status, action authorisation and completion as well as derived issues, constraints and dependencies.
IMS-CAP-039	The ability to provide visualisation capabilities to easily assess an incident and the status of its progress. For example: • On a rail schematic map, • On a geospatial map, • Affected service(s), • Related assets/equipment e.g. gates and assets, • Likely impact. The ability to display visually the progress of incident management, such as that of a 'traffic light' • Green indicates that required actions for the incident are tracking to the response plan, • Red indicates that required actions for the incident are not tracking to the response plan, • The ability to display a heat map to visualize or alert over crowding on platforms.	**E**	Customisation	The product allows for the integration of an existing GIS view. A web based GIS view can be integrated in a widget within the incident record detail view or in a separated application window. Given an interface that allows for raising a zoom to location action, the GIS view can automatically focus on the incident location provided by the user. There are various alternatives for integration, that need to be specified in detail in the ECI phase. The GIS View allows for the localisation of an incident, as well as related asset information (if provided by an ERP system as outlined in IMS-CAP-015). The impact on affected services can be determined in conjunction with the DTTS solution and visualised within the GIS view. The incident progress can be tracked as specified for requirement IMS-CAP-038. Overcrowding of a platform in form of heat maps can be visualized in the GIS view, requiring external data. Additionally, the product allows network drive integration to provide specific information (in the form of documents, spreadsheets or checklists) for the relevant railway installations.
IMS-CAP-040	The ability to track the progress / monitor incidents from creation until completion. For example: • Overall status, • Time-forecast to completion, • Action completed, • Action authorisation (who, when etc.), • Assignment information (assigner, assignee, time/date of assignment), • Updates made to the record (new comments, change to 'fields' such as the incident's category, priority etc.), • Internal communications distributed, • Customer Information distributed.	**E**	Out of The Box	All of the exemplary data (i.e. every single action taken within the incident record and interface communication) is fully logged and flagged with an automatic system timestamp.

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INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-041	The ability to manually and / or automatically escalate a activity or task based on a pre-defined business rules. For example: Business rules are to be configurable. Automated escalation based on: • Time boxed activities, (an incident has not 'progressed' (no record update) for a specified timeframe) • Assignee not available. Manual escalation required where: • The incident itself has risen to the next severity level. • An incident has no response plan after a specified timeframe • Category, severity, priority.	**E**	Customisation	The product allows an automatic (rule-based) or manual escalation of incident action items to defined roles or personnel.
IMS-CAP-042	The ability to manually prioritise incident, actions and activities. For example: • Change priority due to severity.	**E**	Out of The Box	The incident's priority can be set in the corresponding data field.
IMS-CAP-043	The ability to filter views and create real-time and post event incident reports. For example: • All current ('open') Incidents, • All Incidents of a given status. Views of an incident can be customised as different staff (e.g. different profile, location, team etc.) will require different information. Ability to export report based data through a standard based interface.	**E**	Out of The Box	The incident list allows custom filters and sorting and can be exported as .csv/.xls.
IMS-CAP-067	The ability to adjust the boundaries which define the areas of responsibility for users. For example: • Train controller boundaries / sectors (Boards), • Response teams areas of responsibility.	**E**	Out of The Box	The product allows the definition of boundaries/areas of responsibility for different roles, based on time and incident location.
IMS-CAP-068	The ability for users to reserve a incident number in the system without having to provide incident details.	**E**	Out of The Box	An incident number can be reserved providing a minimum of mandatory fields specified by the customer.
Close and Report				
IMS-CAP-044	The ability to create electronic record (package) containing all incident record details and its associated / linked data files. For example: Details may include: • Origin of the Alarm / Incident (e.g. source system, user name), • Priority, • Time of alarm, • Incident ID, • Incident Level, • Cause, • Creator, • Impact on customers. • Time and Date. Other linked data may include: • CCTV, • Phone calls recorded, • Emails, • Text message, • PDF, • Photographs.	**E**	Configuration	The product allows the generation of predefined electronic records.
IMS-CAP-045	The ability to provide incident information to other downstream systems in real-time. For example: • Basic incident information, • Impact on services, • Expected restoration times. Note: Impact to trips, line and station would need to be received from DTTS.	**E**	Out of The Box	The product provides a default XML export functionality of incident details.
IMS-CAP-046	The ability to generate defined and ad hoc reports on incident status.	**E**	Out of The Box	The product can generate defined and ad hoc reports.
IMS-CAP-047	The ability to export safety related incident information in real time to an external system. Note: Refer to IMS architecture for interfacing systems.	**E**	Out of The Box	Incident data can be exported to external systems.
IMS-CAP-048	The ability to export incident details to a data warehouse.	**E**	Out of The Box	Incident data can be exported to a data warehouse solution.
IMS-CAP-050	The ability to manage business rules for closing incident records.	**E**	Out of The Box	Business rules for closing an incident can be defined (i.e.status-depenant mandatory fields or action items).
Other Capabilities				

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-051	The ability to create scheduled reports based on predefined criteria. For example: •Annually, Monthly, Weekly, Daily, Adhoc, • Date / Time, • Incident Reports, • OCR Reports, • NIN Reports, • CAN Reports, • AM Peak Composition Reports, • PM Peak Composition Reports, • AM Peak Summary Reports, • PM Peak Summary Reports, • Delayed Crew Reports, • NIN Report - Outstanding, • NIN Report - Date Raised, • Inactive User Reports, • Other reports such as: Ministerial reports, punctuality reports, sick passengers reports, airport line performance reports, maintenance incident reports etc.	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom reports. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required reports. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-052	The ability to manage (C,R,U,D) predefined reporting templates. Note: Business needs are constantly evolving therefore it is envisaged that report templates will need to be updated and new report types will need to be created.	**E**	3rd Party	JasperReports includes a report designer that allows the creation of custom reports.
IMS-CAP-053	The ability to manage (C,R,U,D) reference data. For example: • Import reference date, • Manage the different categories of incidents, • Manage Incident coding (used for attribution), • Asset information, • Stations, • Line, • Sectors, • Fleet types. Ability to: • Create (access / import) • Read, • Update, • Delete, • Export.	**E**	Out of The Box	The product is supplied with a separate Data Management Client which allows the management of reference data.
IMS-CAP-055	The ability to provide access to incident information to mobile / operational staff and 3rd parties external to the ROC. For example the ability to: • Provide real-time access to users and 3rd parties, • Received incident updates from a mobile device, • Ability to create incident notifications, • Provide a mobile collaborative work place, • Optimise data for mobile devices.	**E**	Out of The Box	The product is supplied with a mobile client which provides users with real-time incident information. The mobile client allows response teams to capture incident information or manage action items. The product allows the distribution of incident information via SMS, email and Voicemail.
IMS-CAP-056	The ability to manually and automatically link / attach relevant information to an incident record. For example the ability to link the following types of data to incident records: • CCTV & video footage, • Photographs, • Diagrams, • Pictures, • Phone call recordings, • Documents.	**E**	Out of The Box	Arbitrary attachments can be uploaded in a network drive and linked to the incident record. Links to relevant incident information can be captured in the incident details.
IMS-CAP-057	The ability to create, manage and maintain workflows, templates and checklists. For example: Workflows, Checklist, Templates we require the ability to: • Create, • Read, • Update, • Delete. Workflow capabilities to manage: • Business processes, • Activities (manual and automated), • Deadlines, • Check lists, • Business rules, • Notifications, • Escalations, • User roles, • User permissions, • Process monitoring, • Administration, • Auditing. Note: It's envisaged that some safety / network rules could be incorporated into the workflows either as pointer or guidance or actions.	**E**	Customisation	The product's design philosophy focusses on a time critical response and resolution of incidents. Workflows are represented by configurable checklists and functional modules which control manual and automated activities, notifications and escalations and allow the capturing of incident details. Checklists and functional modules are configurable components that allow the modelling of workflows. Checklists are ordered and displayed depending on incident categories, incident location and time. Business rules can be set for action items in the checklist, for example, to automatically notify users. The product allows an in-depth administration of user roles and permissions. It is possible to monitor the overall progress of multiple incidents in the list view, while details for single incidents can be accessed through the incident view. The product integrates an audit log, which fully traces all activities that have affected at any time a specific operation, procedure, or event (see IMS-CAP-038).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-058	The ability to manage alarm business rules: For example: • Manage Hierarchy of alarms, • Automated suppression rules, • Associated workflows rules, • Notification rules (Colour, frequency, visual, brightness, audio, volume), • Trigger CCTV views. Note: Requirement related to human factors.	**E**	Configuration	Alarm business rules can be managed in the Administration Client.
IMS-CAP-059	The ability to manage the roles and their associated permissions. For example: • Create, • Read, • Update, • Delete. • Roles (for example: Train Controller, Shift Manager), • Groups, (Train Control, Customer Information, Signalling etc.), • Permissions (ability to supress alarm, depart workflow, assign workflow). **Note**: The roles need to be in alignment with and in consideration of roles defined in other systems.	**E**	Out of The Box	Roles, Groups and Permissions can be managed in the Administration Client.
IMS-CAP-060	The ability to filter /search and select incident records for viewing. For example: • Origin (e.g. source system), • Priority, • Time of alarm, • Most recently acknowledged, • Incident ID, • Incident Level, • Cause, • Creator, • Time and Date.	**E**	Out of The Box	The incident list represents a view of all incidents. Those can be can be filtered, searched and sorted by different incident attributes, e.g. incident location, category, time/date, origin,…
IMS-CAP-061	The ability to view or instigate raising or closing of defect records for assets whose defect has caused a delay to services. For example: • View defect records for assets, • Instigate opening defect record for a specific asset / incident, • Instigate closing a defect record for a specific asset / incident. **Note:** Defects are managed in Fault Management Systems.	**E**	Customisation	The IFMS interface allows the viewing, raising or closing of defect records.
IMS-CAP-062	The ability to integrate and share real-time and post event incident information with other systems. For example systems such as: • Customer Information Management System, • Dynamic Timetabling System, • Operational Video Display System (OVDS), • Business Intelligence Systems, • Calculation Engine, • Fault Management Systems, • Safety Management Systems, • External 3rd Party Systems, • Other Incident Management Systems, • Other Computer Aided Dispatch Systems (i.e. ICEMS), • ERP systems, • Geospatial Information Systems (such as Small World), • State emergency services, • Wayside Information Management System (for alarms), • TMC Incident Management Systems, • Train Location Systems / On Time Running (TLS-OTR), • Billing systems . For example information exchange patterns such as: • Bi-directional request & respond, • Pull, • Push. • Receiving incident records from 3rd part incident management systems. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	Incident information can be sent in real-time or based on defined events (e.g. closing/completing an incident), over a variety of channels or services, as specified in IMS-CAP-025. Specific interfaces allow a deeper integration into up- and downstream systems, i.e. CIMS, DTTS, TLS-OTR, FPe, FMBS, CE, Reliance Rail, IFMS, SRS, ERP, GIS, a business intelligence solution, WIMS and 3rd party solutions. See Chapter 8 - "Interfaces" of the document "Understand Requirements_FRQ.pdf" for a detailled interface description.
IMS-CAP-063	The ability to integrate with a day of operation timetabling system. For example: • Receive alerts when services are experiencing delays, • Receive transposition details (i.e. add stop, skipped stop, terminate, cancel run etc.) • Receive lists of services affected, • Provide estimated restoration / recovery times • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the DTTS allows the interchange of incident and alert information (including affected services and estimated restoration and recovery times) and transportation details (SIRI SX, PT and ET).
IMS-CAP-064	The ability to integrate with a Customer Information Management System. For example: • Provide cause impact and advice details, • Provide estimate recovery times. • Compliance with SIRI 1.3 + standard.	**E**	Customisation	The interface to the CIMS allows the interchange of incident information and recovery times (SIRI SX).

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-065	The ability to integrate / display views on a large video display. For example: • Display dashboard type views, • Display GIS views, • Display location of response teams, • Display the location of a incident.	**E**	Out of The Box	It is possible to display the required information on a large video display. The product provides data for dashboard and GIS displays in real time and allows visualisation in a standard browser.
IMS-CAP-066	The ability to support the management of multiple incidents simultaneously. For example: • Different users working on different incidents, • Same users supporting different incidents.	**E**	Out of The Box	It is possible for different users to process different incidents. One user can open multiple incidents for processing at the same time. Multiple users can process a single incident at the same time. The product detects data conflicts and provides different mechanism for their resolution.
IMS-CAP-069	The ability for users to configure their own user preferences. For example: • Set up notifications of interest based on incident type, area of responsibility, • Set up method of notification, text, email etc., • Set up dashboard views. Note: Authorisation and Authentication is covered in the NFR's.	**E**	Out of The Box	Users can configure their personal notification rules and outbound channel in the client application. Personal dashboard views can be configured in the integrated 3rd party component as specified in IMS-CAP-079.
IMS-CAP-070	The ability to manually and automatically attribute further details to incident records. For example: • Who is responsible for root cause analysis, • Who the incident belongs to (Business unit, contract etc.), • Incident Delay Attribution (Late, very late, cancelled etc.), • Incident status (Open, Closed etc.), • Location of a incident, • Force majeure, • Attribution reporting, • Ability for attribution through mobile devices. Note: There are business rules (contractual timeframes) in which externals need to be informed of incident details.	**E**	Out of The Box	Further incident details can be manually or automatically (based on business rules) added to the incident description.
IMS-CAP-071	The ability to trigger viewing of specific CCTV cameras based on predefine alarms and business rules. For example: • Trigger CCTV cameras once a emergency help point has been activated (i.e. on set, on station, in lift etc.), • Trigger CCTV cameras on plats forms that are over crowded.	**E**	Out of The Box	The product is capable of catching alerts from CCTV cameras on predefined events and can display live and recorded video feeds.
IMS-CAP-072	The ability to assist users in managing / arranging alternative transport with 3rd party providers. For example: • Notification, • Booking, • Tracking progress (i.e. ETA), • Communicating with station staff. Note: This requirement is also covered under workflow requirements.	**D**	Out of The Box	3rd party providers for alternative transports can be tied to the product's responsibility model, allowing the user to access booking information or communication with station staff over various outbound channels, based on the incident location. Progress tracking can be assisted with a specific checklist.
IMS-CAP-073	The ability to provide users with visibility of pre-planned special events / track work. For example: • Easter show, • Carols in the domain, • Track work - daily summary reports, • Road, bus, ferry and light rail.	**E**	Configuration	The Administration Client allows the configuration of special events in advance. The User Client can display a list of upcoming events.
IMS-CAP-074	The ability to provide users with access to images, photos and documents to aid in the communication of incident details. For example: • GIS imagery, • Access to reference data, • Ability to edit imagery and distribute updates.	**E**	Configuration	The User Client allows the upload of unstructured data to a network drive folder for the specific incident (see IMS-CAP-056). It is possible to send incident details and file attachments to designated users or user groups. The GIS View provides the user with a toolset for drawing objects into the GIS view and publishing updates to other users.
IMS-CAP-076	The ability to manage (C,R,U,D) meta data for records within the system. For example: • Create, • Read, • Update, • Delete. Meta data examples: Location, Creator, Alarm Type etc.	**E**	Customisation	It is possible to manage meta data for incident records.
IMS-CAP-078	The ability to assist / prompt users to help in the diagnosis of the root cause of a incident / defect.	**E**	Out of The Box	The product aids the user in diagnosing the root cause of the incident. For example by: - checklist-based gathering and display of incident information - detailed information from interfaces to other incident management systems - correlating data from upstream or integrated systems (e.g. relevant assets, incident location details, weather information..) - display of alarm sources

Identifier	Functional Requirement	Criticality E = Esse	Tenderer's Response	Comment (Optional)
INCIDENT MANAGEMENT SYSTEM REQUIREMENTS				
IMS-CAP-079	The ability to manage (C,R,U,D) dashboard views that will be available to users. For example: • Create, • Read, • Update, • Delete. • Flexible filtering and data visualisation, • Shared views, • Views including GIS, • Views including internal and external incident information	**E**	3rd Party	The product can integrate the 3rd party reporting tool JasperReports to create custom dashboard views. Alternatively, it is possible to use an existing data warehouse or reporting solution for generating the required dashboard views. The product provides a data export functionality as specified in IMS-CAP-048.
IMS-CAP-080	The ability to provide users with the ability to access and view dashboards For example: • Access given to those who are within ROC, • Access provided via mobile device. • Information on a dashboard is real-time, • Tables, graphs, hot spots, GIS views etc.	**E**	3rd Party	The recommended 3rd party tool (see IMS-CAP-079) provides a browser based dashboard view which allows users to access and view dashboards on a broad range of devices, e.g. large video displays or mobile devices. The product provides those dashboards with real-time data.
IMS-CAP-081	The ability to view a incidents sequence of events in time order in either real-time or post incident. For example: • Real-time replay to help identify what actions have been activated, • Post event replay to learn and improve process and procedure	**E**	Customisation	The product's audit log enables a full reconstruction of the incident sequence. It is possible to provide a replay functionality for displaying the actions taken in the incident resolution.
IMS-CAP-082	The ability to manage (C,R,U,D) a contact management details. For example: • Telephone, email, mobile, address, • Provide access contact details for internal and external 3rd parties, • List of on call response staff. **Note:** This may require integration with existing legacy systems.	**E**	Out of The Box	The product's Administration Client allows management of contact details. The User Client can display corresponding response staff and allows the distribution of contact details.
IMS-CAP-083	The ability to simulate how a incident recovery may unfold. For example: • Based on actions assigned, • Based on historical information (provide improved estimated response / recovery times), • Based on feedback received from end users.	**I**	Customisation	It is possible to implement a rule set that allows a simulation of the actual incident resolution based on incident details (estimated response and recovery times and assigned actions).
IMS-CAP-084	The ability to view and monitor resource constraints. For example: • Monitor availability of resources, • Monitor shift start and end times, • Access competence levels. Note: This will be useful information prior to dispatching the relevant resources to assist in the recovery of a incident.	**E**	Out of The Box	The product is capable of displaying available response teams as outlined in IMS-CAP-028. Shift start and end times as well as competency levels of resources can be managed in the Administration Client
IMS-CAP-085	The ability for the system to dynamically learn and improve processes based on historic data. For example: • Ability to change activities based on timeframes, • Ability to suggest alterations to predefined support plans due to identified bottle necks.	**I**	Future	
IMS-CAP-086	The ability to capture incidents for existing incident management systems. i.e. Act as the single point in which all incident records are created. Note: It is envisaged that IMS will become the single point in which incident records are created. After which IMS will pass the incident records down to the existing incident management systems. For example: • IFMS, • SRS, • FMS.	**E**	Customisation	The product will integrate with the existing incident management systems for cross referencing incidents, sharing incident information or raising and closing incidents.

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
Accessibility			
NFR-ACC-001	The component/(s) shall be accessible via standards based browser environment or thin client, for example: • Remote Desktop Protocol (RDP) • Citrix	**E**	Out of the Box
NFR-ACC-002	The component/(s) shall be accessible remotely to 3rd parties, based on business rules and appropriate permission, for example: • Transport Management Centre • New South Wales Police Force	**I**	Out of the Box
NFR-ACC-003	The solution shall enable the dynamic reconfiguration of workstations to meet operational demand, interacting with the necessary infrastructure and telecoms systems to enable communications and control authorisation to move with a workstation.	**E**	Out of the Box
Auditability			
NFR-AUD-001	The solution shall provide the ability to tailor audit requirements by component. The audit logs shall contain at least the following security relevant information: • identification and authentication of users • date and time that the event occurred and was recorded • source system, device or application, e.g. IP address, application, or assigned name • type of action, for example include authorise, create, read, update, delete and accept network connection • before and after values when action involves updating a data element • any status, response or errors values generated as a result of the event or activity.	**E**	Out of the Box
NFR-AUD-002	The solution shall provide the ability to tailor audit requirements by component. The events to be recorded in activity and/or audit logs need to include but not necessarily be limited to: • start up and the stopping or shutdown of: o applications and databases o operating systems, including servers o infrastructure components such as firewalls, routers and switches • connection initiation, establishment and termination, including: o source and destination address o desired or requested service • information received from external interfaces as well as information dispatched to other systems • errors that occur in any infrastructure, operating system or application component • successful activities initiated by all individuals, whether authorised or not • changes to production systems and applications • relevant application and/or process/thread activity • creation, modifying, deleting and disabling or revoking of user permissions and access • records created by security systems such as anti-virus/malware tools, IDS/IPS (Intrusion Detection Systems / Intrusion Prevent Systems), firewalls and access/identity management tools	**E**	3rd Party
NFR-AUD-003	The solution shall ensure audit logs are stored and maintained in accordance with the relevant security classification level assigned to the log information, in an un-editable format based on date and/or other recorded audit details to be specified.	**E**	Out of the Box
NFR-AUD-004	The solution shall ensure the audit logs shall be stored in a device separate to the device or application that created the logs. This is to: • minimise the potential for deliberate corruption or unauthorised deletion of logs • permit the use of shared logging infrastructure, including integrity mechanisms, minimising cost overheads and chronologically synchronising logs • improve the ease of correlating events across applications, systems and infrastructure.	**E**	Out of the Box
NFR-AUD-005	The solution shall be designed and implemented to minimise the recording of sensitive or personal identifying information in logs and audit trails unless such detail is necessary for specific business or operational reasons.	**E**	Out of the Box
NFR-AUD-006	The solution shall provide functionality to interrogate audit logs and raise alerts on critical and suspicious activity.	**E**	Out of the Box
NFR-AUD-007	The solution shall provide the ability to restrict access to audit logs, to system and appropriately trusted application administration and support staff.	**E**	Out of the Box
NFR-AUD-008	The solution shall provide Auditors direct access to the audit system to view audit logs and/or the ability to export to a reporting engine.	**E**	Out of the Box
NFR-AUD-009	The solution shall record all access of audit logs. These log records in turn require protection as per NFR-AUD-003 to NFR-AUD-008	**E**	Out of the Box
NFR-AUD-010	The solution shall ensure logging facilities and log information are protected against tampering.	**E**	Out of the Box
NFR-AUD-011	The solution shall support variable retention policies for audit logs, dependent upon Sydney Trains Log Retention Policy "ICT-SGD-70107 Logging".	**E**	Out of the Box
Availability			
NFR-AV-003	The component/(s) shall ensure that the installation of patches / hot fixes etc do not require the system to be taken down or reboot.	**E**	Configuration
NFR-AV-004	The component/(s) shall seamlessly operate across multiple physical data centres.	**E**	Out of the Box
Interoperability			
NFR-IO-001	The component/(s) shall support the following transport data interchange standards: - GTF/GTFS-R - SIRI (v1.3 +)	**E**	Customisation
NFR-IO-002	The component/(s) shall support the extraction of data based on ETL standards.	**E**	Out of the Box
NFR-IO-003	The component/(s) shall support interfacing with email systems supporting SMTP.	**E**	Out of the Box
NFR-IO-004	The component/(s) shall be compatible with common desktop browsers, for example: • Internet Explorer (*note: v8.0 is currently deployed within Sydney Trains*) • Safari • Chrome • Firefox	**E**	Out of the Box

Identifier	Non-Functional Requirement	Criticality E = Essential I = Important D = Desired	Tenderer's Response
NON-FUNCTIONAL REQUIREMENTS			
NFR-IO-005	The component/(s) shall be compatible with common mobile browsers, for example: • iPhone/iPad • Android • Blackberry	**E**	Out of the Box
NFR-IO-006	The component/(s) clock shall be synchronised with the definitive master clock.	**E**	Out of the Box
Maintainability			
NFR-MNT-001	The component/(s) shall support Sydney Trains backup rotation requirements without the need to restrict end user access.	**E**	Out of the Box
NFR-MNT-004	The Disaster Recovery system shall ensure all audit logs are backed up on a regular basis.	**E**	Out of the Box
NFR-MNT-009	The component/(s) shall provide an automatic way of migrating the data of existing database in case of data structure change during transfer to new versions.	**E**	Out of the Box
NFR-MNT-010	The component/(s) shall provide the ability to revert to a previous release.	**E**	Out of the Box
NFR-MNT-011	The component/(s) shall ensure support activities can be completed remotely to reduce operational interruption.	**E**	Out of the Box
NFR-MNT-012	Maintenance task / service activities must be able to be completed without operational interruption.	**E**	Out of the Box
Manageability			
NFR-MGN-001	The component/(s) shall support systems management standards such as SNMP.	**E**	Out of the Box
NFR-MGN-002	Critical errors (e.g. back up failure) that occur within the component/(s) shall provide warning message to the system administrator (e.g. via SMS, email). These alarms must raise an incident within the Sydney Trains Incident Management System.	**E**	Out of the Box
Performance			
NFR-PER-001	The component/(s) shall provide a response time for all functions (e.g. application loading, screen open and refresh times) below 2 seconds under peak loads. All components should have a fit for purpose response time.	**E**	Out of the Box
NFR-PER-002	The component/(s) shall have the ability to not impact system performance while auditing and monitoring of usage.	**E**	Out of the Box
Portability			
NFR-PO-001	In the event of a requirement to apply a patch/upgrade, the component/(s) shall automatically port any customisation authorised by the application supplier.	**E**	Out of the Box
NFR-PO-002	The component/(s) shall support ease of migration to new technology (hardware or software) as and when it becomes available to the market.	**E**	Out of the Box
Reliability			
NFR-REL-001	The component/(s) shall provide the ability to retain all electronic files, at least until confirmation of a successful exchange / transfer process. This is a procedural safeguard, to ensure that records are not deleted before successful exchange / transfer is reported from the recipient.	**E**	Out of the Box
Reporting			
NFR-RPT-001	The component/(s) shall support standards based printers, formats, page sizes, for example: • A0 for zigzags.	**E**	Out of the Box
Scalability			
NFR-SCA-001	The component/(s) shall support simplicity of scaling options both horizontally and vertically, for example add more users to a node, add more nodes.	**E**	Out of the Box
Security			
NFR-SEC-001	The component/(s) shall support integration with Sydney Trains' Identity and Access Management component/(s) (Oracle) to perform authentication. Sydney Trains authentication process uses Single Sign On / Same Sign On standard (e.g. provide single sign on access to component/(s) once a user is logged on to the Sydney Trains network (via a Sydney Trains computer or a VPN). Content classified as 'Protected' will require the user to provide their user name and password to access it.	**E**	Configuration
NFR-SEC-002	The component/(s) shall support LDAP authentication.	**E**	Out of the Box
NFR-SEC-003	The component/(s) shall support that USER_ID's are only used to identify and reference users and not as proof of identity or authentication mechanism.	**E**	Out of the Box
NFR-SEC-004	The component/(s) shall support access control checks, if a web application, to access protected URL, must not be bypassable by a user that simply skips over the page with the security check.	**E**	Out of the Box
NFR-SEC-005	The component/(s) shall ensure, if a web application, administrator access through the front door of the site is not possible.	**E**	Out of the Box
NFR-SEC-006	The component/(s) shall provide the ability to apply a Segregation of Duties (SoD) matrix for roles and responsibilities, which is easily updated via an administrator user interface. This may include • access levels (role based, field level, category/content) • password requirements - length, special characters, expiry, recycling policies • inactivity timeouts – durations, actions • re-authentication after timeout.	**E**	Out of the Box
NFR-SEC-007	The component/(s) shall provide the ability to provide risk and SoD analysis at user, role, transaction, and authorisation object field value levels.	**I**	Customisation
NFR-SEC-008	The component/(s) shall provide the ability to simulate user role changes, in order to identify hidden risks at the user level, before the introduction of a user change.	**I**	Customisation
NFR-SEC-009	The component/(s) shall provide the ability to enable automation of identification of SoD conflicts at each user level, together with the ability to generate and distribute reports detailing SoD conflicts and mark those that have an approved exception.	**I**	Customisation
NFR-SEC-010	The component/(s) shall support a "change password" function, whereby users are required to provide both their old and new password when changing their password.	**E**	Out of the Box
NFR-SEC-011	The component/(s) shall ensure, if a web application, authentication and session data is not submitted as part of a GET, POST should always be used instead.	**E**	Out of the Box
NFR-SEC-012	The component/(s) shall provide the ability to automatically notify designated security administrators of unauthorized access or attempted access and record in a log with reporting.	**E**	Out of the Box
NFR-SEC-013	The component/(s) shall not indicate whether it was the username or password that was wrong if a login attempt fails.	**E**	Out of the Box
NFR-SEC-014	The component/(s) shall inform users, if a web application, of the date/time of their last successful login and the number of failed access attempts to their account since that time.	**E**	Out of the Box
NFR-SEC-015	The component/(s) shall ensure, if a web application, authentication pages are marked with all varieties of the no cache tag to prevent someone from using the back button in a user's browser to back up to the login page and resubmit the previously typed in credentials. Many browsers now support the "autocomplete=false" flag to prevent storing of credentials in autocomplete caches.	**E**	Out of the Box

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NON-FUNCTIONAL REQUIREMENTS			
NFR-SEC-016	Remote access to the ROC components by third party users including Service Providers (e.g. remote system managers, developers. technical support etc.) can only be done by: • Corporate Virtual Private Network (F5-Firepass).	**E**	Out of the Box
NFR-SEC-017	The servers running ROC systems should be isolated on a separate network segments in order to prevent attackers from using them as a platform for mounting attacks on systems in other segments and vice versa.	**E**	Out of the Box
Usability			
NFR-USE-001	The component/(s) shall be designed to minimise cognitive load. Use of configurable audible alarms and visual stimulus must be designed to entice an appropriate response and to differentiate between critical and non-critical events (to be determined by business rules).	**E**	Out of the Box
NFR-USE-002	The component/(s) shall ensure alerts are distinctive, sufficiently loud (at least 5dB(A) above ambient noise level), of an appropriate frequency range (between 500Hz to 3000Hz) and shall not disturb or be confused with other operators alerts.	**E**	Out of the Box
NFR-USE-003	The component/(s) shall provide the ability to change character size, font, contrast and colour of displays to: • allow for the use of more or larger monitors • maximise viewing distance • reduce focal convergence for operators (related to eye strain) • reduce the impact on the operator of heat from monitors.	**E**	Configuration
NFR-USE-004	The component/(s) shall provide the ability for Administrators to perform configuration tasks without customisation and vendor support. These tasks may include: • maintain all value lists • maintain all field labels • maintain data filters • maintain workflows • maintain reports • hide/show and reorder columns • add data filters.	**E**	Configuration
NFR-USE-005	The component/(s) shall provide the ability for Administrations to add more fields to the data input screens for capturing additional business specific information without having to write any code. These fields shall be configured without creating additional tables or without the additional effort of referencing the new fields to the existing fields on the screen. The user shall also be able to define the data type and the data length of the additional fields without having to write any code.	**I**	Configuration
NFR-USE-006	The component/(s) shall have unified, easy, flexible and user friendly interface enabling, for example, the following settings: • personal user menu • personal user settings • field placement on screen • field composition on screen.	**E**	Customisation
NFR-USE-007	The component/(s) shall support multiple screen sizes and resolutions. Minimum display resolution shall be 1280x1024 pixels (design aim of 1600x1200).	**E**	Out of the Box
NFR-USE-008	The component/(s) shall not reduce workspace area if Branding were applied to that component.	**E**	Out of the Box
NFR-USE-009	The component/(s) shall provide online help which is contextual and target the Sydney Trains users.	**I**	Out of the Box
NFR-USE-010	The component/(s) shall ensure all user interfaces have an Australian locale, for example dates displayed in Australian format dd/mm/yyyy, dictionaries Australian, etc.	**E**	Out of the Box
NFR-USE-011	The component/(s) shall be consistent with common interface conventions and best practices, for example: • support minimal keystrokes/typing (e.g. provide reference data via drop down list opposed to free text fields) • quick, simple and user friendly	**E**	Out of the Box
NFR-USE-012	The component/(s) shall perform all functions with keyboard support (mouse is not mandatory).	**D**	Out of the Box
NFR-USE-013	All component/(s) shall be homogenous with respect to keyboard use, screen layout and menu operations with Graphic User Interface (GUI) support.	**D**	Out of the Box
NFR-USE-014	The component/(s) shall have facility to display confirmation / warning windows, for example deletes, changes.	**E**	Out of the Box
NFR-USE-015	The component/(s) shall be able to gracefully handle any feasible set of inputs, any errors that can be generated by internal components such as system calls, database queries, or any other internal functions. For example: • when errors occur, the site should respond with a specifically designed result that is helpful to the user without revealing unnecessary internal details • error messages must be produced in meaningful, plain English, and logged so that their cause can be reviewed.	**E**	Out of the Box
NFR-USE-016	The component/(s) shall include progress indicators while performing functions greater than 2 seconds.	**E**	Out of the Box