

PART E

SCOPE OF WORK

Scope of Work Contents

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E1 Scope

E1.1 Introduction

The Contractor is engaged to upgrade security on RailCorp's fleet of rolling stock using electronic access controls. The upgrade involves:

- a) the replacement of the existing locks with electronic locks to secure crew cabs on each Set,
- b) the supply of keys for use by RailCorp and its contractors' personnel;
- c) the supply, installation and commissioning of key activation equipment to be located at several locations in New South Wales;
- d) support for the integration of the key activation equipment and the associated Secure Access application system(s) with the RailCorp data systems and communications network;
- e) supply of maintenance, supporting spares, documentation and training; and
- f) evaluation of the suitability of the Secure Access application across RailCorp's fleet.

E1.2 Phased implementation

- a) The Contractor shall provide the specified services in the following phases:
 - i. Provision of project management services as described in clause E3;
 - ii. Provision of design management services as described in clause E4.
 - iii. Delivery of Fleet "Proof of Concept" as described in clause E5 (Separable Portion 1) .
 - iv. Delivery of Pilot – Phase 1 – Secure 1 (only) Millennium Set as described in clause E6 (Separable Portion 2).
 - v. Delivery of Pilot – Phase 2 – Secure Remaining Millennium Sets as described in clause E7 (Separable Portion 3).
 - vi. Delivery of the Rollout to the rest of the Fleet as described in clause E8 (Separable Portion 4) and
 - vii. Delivery of Through Life Support of vendor specific software
- b) As a Separable Portion (Separable Portion 5) the Contractor may also be required to provide Through Life Support for the Access Equipment and Applications supplied as described in clause E9.

E2 Scope Exclusions

The following are excluded from the Contractor's scope of work:

- a) Procurement and installation of the:
 - i. the servers;
 - ii. the workstations;
 - iii. the network cabling and hardware;

- iv. workstation software licences and operating system software for the RailCorp Standard Operating Environment (SOE).
- b) Installation of the supplier Specific Authorisation equipment.
- c) Provision of suitable accommodation and office facilities for the project team (desk, cubicle, telephone etc.) at RailCorp sites.

E3 Project Management

E3.1 Project Management Services

The Contractor shall provide a Project Manager to liaise closely with RailCorp and its contractors for the duration of the Contract. The Contractor's Project Manager shall provide the following project management services:

- a) Plan the work, monitor progress and liaise closely with RailCorp throughout the Contract.
- b) Meet with RailCorp at dates and locations advised by RailCorp once per week or as otherwise agreed to report progress and discuss issues.
- c) Deliver project management documentation as defined in clause E3.2.
- d) Maintain, update and reissue the project plan detailing the tasks, timing, location and status of the project activities and deliverables; and
- e) Advise RailCorp on the logistic requirements to support the implementation and Through Life Support of the locks (training, stores quantities, spare parts, etc.)

E3.2 Project Management Documentation

The Contractor shall supply and maintain, at a minimum, the following documentation throughout the Contract term:

- a) Project Management Plan, maintained in MS Word.
- b) Project Schedule with milestones, resource assignments and dependencies maintained in MS Project to at least a 3 level Work Breakdown Structure.
- c) Milestones, deliverables and dependencies register (preferably identified and generated from the project schedule) shall list all key milestones and deliverables and their owners. The dependencies shall be identified against owner, with the latest completion date necessary to avoid impact on the schedule.
- d) Risks & Issues Register(s) maintained in MS Excel format.
- e) Test Plan covering objectives and scope of testing, entry and exit criteria for each phase of the contract.
- f) Implementation Plan documenting the implementation tasks, procedures, pre-requisites and systems assurance processes required to install the solution into the RailCorp
- g) Issue of Weekly and Monthly Project Status reports as per agreed schedules
- h) Attendance of weekly, monthly and ad hoc status review meetings as per agreed schedules.
- i) End of Phase report for each phase of the contract.

E3.3 Safety Management

The Contractor shall:

- a) Supply to RailCorp the following documentation prior to commencing work on RailCorp premises and maintain it throughout the contract term:

- i. Risk / hazard register with associated mitigation measures; and
 - ii. Safe Work Method Statements and Instructions for the work undertaken at RailCorp premises.
- b) Comply with the Occupational Health and Safety procedures applying to each of the locations where the Contractor works.
- c) Implement the Safe Work Method Statements and Instructions.
- d) Satisfy the requirements of the RailCorp Safety Management System whilst working at RailCorp locations including attending/completing necessary safety training at contractor's cost.

E4 Design Management

E4.1 Design Management Services

The Contractor shall supply the following design management services:

- a) Deliver drawings of the lock configuration within the door for each Set type;
- b) Deliver drawings showing the installation of the door and lock configuration for each of the Set types and their associated access doors and preparing an approach and design for the fitment of the locks to each Set type (noting that there may be variations of door and lock assemblies within a Set type);
- c) Submit details of the materials used sufficient to confirm the risk of electrolytic corrosion between dissimilar metals used in the locks and the Sets is minimal.
- d) Participate in reviews of the drawings with RailCorp ;
- e) Deliver drawings showing the cabling and power requirements of the authorisation stations together with documentation detailing the relevant installation and configuration data and settings;

E4.2 Design Documentation

The Contractor shall deliver design documentation for the overall System design and the design for each Set type in a priority to be agreed with RailCorp.

The solution design must be completely documented for installation, maintenance, technical support, Help Desk support and training. Documentation deliverables shall include, but not be limited to:

- a) Drawings showing the overall dimensions of the equipment, including mounting dimensions and clearances;
- b) A parts list for each Set type listing the locks and other items to be installed on each Set;
- c) An electrical wiring diagram of the activation stations showing the external electrical and communications connections; and
- d) Installation and mounting details showing how the locks should be installed, including clearances and access; seals or sealing plates; locating lugs; fixing bolt locations and the location of maintenance access hatches or covers.

E5 Fleet “Proof of Concept”

E5.1 Notice to Proceed with Proof of Concept

Following written authorisation of the Engineer, as a “Proof of Concept”, the Contractor shall fit sample locks to the approved drawings to the crew cab doors of one of each Set type and removing once sighted by RailCorp prior to rollout.

E5.2 Qualification Activities

The Contractor shall demonstrate the ability of the equipment to satisfy the requirements of Part F through qualification activities including demonstrations, inspections and tests.

The Contractor shall deliver one or more test specifications describing the proposed verification activities for review by RailCorp.

The qualification activities shall include tests of all materials and items which are likely to be subject to vandal attack. The tests shall verify the features and performance of the materials and components, and the results submitted to RailCorp.

E5.3 Proof of Concept Tests and Inspections

The Contractor shall perform tests and inspections demonstrating the equipment is correctly installed and working as expected.

The Contractor shall deliver the test procedure(s) to be conducted for locks on each type of Set.

E5.4 Removal and Restoration

At the conclusion of the Proof of Concept phase RailCorp will, at its sole discretion, determine whether the next phase (Pilot – Phase 1) is to proceed.

E6 Pilot – Phase 1 - Secure 1 (only) Millennium Set

E6.1 Secure Millennium Set

The Contractor shall review the Millennium door and lock configuration for the various access doors and prepare an approach and design for the fitment of the locks;

Upon approval by the Engineer, the Contractor shall install the new electronic security locks on one 4 Car Millennium Set. Additionally, the Contractor shall supply and deliver the hardware, software, documentation and training services required for both the Pilot Phase 1 and Pilot Phase 2.

The Contractor shall conduct qualification tests and deliver a test report demonstrating the ability of the equipment to satisfy the requirements of Part F for review by RailCorp.

The contractor shall participate in the conduct of qualification tests and deliver a test report demonstrating the ability of the equipment to withstand the RailCorp train washing activities.

E6.2 Objectives

The Contractor shall participate in a Pilot of the electronic access system to identify any issues with hardware, Set configuration, Authorisation and issuing of keys to Crew. The objectives of the Pilot are to:

- a) Assess and validate the operational and technical suitability of the product solution and the associated work practice changes for further deployment to all of the RailCorp fleet of trains, including the PPP Sets.
- b) Gather data on the reliability and effectiveness of the locks and to assess and fine-tune operational processes in anticipation of a progressive rollout to the complete RailCorp fleet.

E6.3 Scope of Work

The Contractor shall participate in a Pilot of the electronic access system to identify any issues with hardware, Set configuration, Authorisation and issuing of keys to Crew. The Pilot will consist of the Contractor:

- a) Reviewing the Millennium door and lock configuration for the various crew cab access doors and preparing an approach and design for the fitment of the locks;
- b) Upon approval by the Engineer:
 - i. Installing, configuring and testing ICT application software components on the RailCorp server including initial set up, based on the employees list, administration PCs, authorisation points, locks and keys access information provided by RailCorp.
 - ii. Installing the new electronic security locks on one Millennium Set.
- c) Supplying keys to RailCorp for the Millennium Crew, Cleaners and other authorised personnel;
- d) Supporting the Pilot with personnel available for rapid deployment to RailCorp sites and Set to overcome any initial issues;
- e) Supplying appropriate applications for installation on RailCorp servers;
- f) Assisting RailCorp with the installation and configuration of supporting applications on RailCorp servers;
- g) Assisting RailCorp with the installation of the supplier specific Authorisation hardware and Authorisation Station software into the relevant locations;
- h) Providing training sessions to RailCorp personnel on the operation and maintenance of the Access system;
- i) Providing 24 hour x 7 days technical support for the equipment and application software during the pilot including telephone support with response times of less than 15 minutes and physical presence within 120 minutes at any RailCorp city or suburban;
- j) Providing test plans to test all materials and items which are likely to be subject to vandal attacks and extreme chemical attack through the train washing process. The tests shall verify the features and performance of the materials and components, and test results are to be submitted to RailCorp; and
- k) Providing the End of Phase report that includes lessons learnt and recommendations for Pilot – Phase 2 activities.

E6.3.1 Lock Installation

Upon approval by the Engineer, the Contractor shall progressively install new electronic security locks on the target Fleet. It is likely that the new electronic security locks will be installed on the Fleet in groups by Set type within operating Sector. The Contractor shall:

- a) Perform the installation work outside of the peak train operating times whilst the trains are stabled at Stabling Yards.
- b) Ensure all finish cover moulds, cover pressings and panel work joints are neatly made without recourse to use of filler material or additional cover plates.
- c) Schedule and sequence the work activities so that the scope is completed during off-peak periods whilst the trains are stabled overnight. Typically this means that tasks cannot take more than 4 hours on the train.

E6.3.2 Software Implementation

The Contractor shall deliver software implementation services that include, but are not limited to:

- a) Software installation and configuration of the administration server application;
- b) Development and execution of all test cases with detailed test scripts, test data and expected results for each test case for verification and ongoing maintenance;
- c) Provide technical support to RailCorp with the installation of the Authorisation Stations (including hardware and software) into the relevant crew depots.

E6.3.3 Documentation

The Contractor shall provide and maintain operational and support documentation deliverables that include, but are not limited to:

- a) Software installation and configuration instructions for servers and authorisation units;
- b) Administration and management operating instructions;
- c) Diagnostic and troubleshooting instructions; and
- d) Routine maintenance and repair procedures for the locks and authorization stations.

The Contractor shall deliver user manuals and training documentation which address the needs of the following stakeholders:

- e) RailCorp ICT covering Application Support, Maintenance & Operation and Application Usage & Training for administrators and end users;
- f) RailCorp Security covering archiving to different media, generating custom and static reports, inquiries on key and lock activities by groups and locations;
- g) RailCorp Rolling Stock Division and Downer EDI Rail covering lock and key replacement and maintenance;
- h) RailCorp Crewing and Presentation Divisions covering key maintenance and re-authorisation; and
- i) Downer EDI Rail's Millennium Train support organisation, covering key maintenance and re-authorisation;
- j) RailCorp Security covering RailCorp Security covering archiving to different media, generating custom and static reports, inquiries on key and lock activities by groups and locations;
- k) Downer EDI Rail TLS organisation.

E6.3.4 Training

The Contractor shall provide a single train-the-trainer session to each of the groups in clause E6.3.3 (e)–(k) above on the relevant user manuals and training documentation. RailCorp will provide the venue for these sessions and the Contractor shall supply all training materials.

The Contractor shall provide role-based training material for RailCorp staff engaged as end users, administrators, auditors, technical training (including operating system administrators, database administrators and developers, and technical training to maintenance staff and engineers). The training material shall at least cover the following:

- a) configuring the authorisation station and Contractor Specific equipment,
- b) configuring locks,
- c) configuring keys,
- d) auditing locks and keys;
- e) diagnosis and troubleshooting,

- f) removing and replacing locks and keys.
- g) application software.
- h) Producing reports and archiving data.

E6.4 Removal and Restoration

RailCorp at its sole discretion may decide not to proceed with further implementation and in this event the Contractor shall remove the locks and restore the Set to its former condition.

E7 Pilot – Phase 2 - Secure Remaining Millennium Sets

E7.1 Notice to Proceed with Pilot Phase 2

Upon approval by the Engineer, the Contractor shall install the electronic security locks on the remainder of the Millennium fleet.

E7.2 Support during the Fleet Pilot

This phase of the Pilot will consist of the Contractor:

- a) Installing the new electronic security locks on the remainder of the Millennium Fleet;
- b) Supporting the Pilot with personnel available for rapid deployment to RailCorp sites and Sets to overcome any initial issues;
- c) Supplying additional applications for installation on RailCorp servers, where required;
- d) Assisting RailCorp with the additional installation and configuration of supporting applications on RailCorp servers, where required;
- e) Assisting RailCorp with the additional installation of the supplier specific Authorisation hardware and Authorisation Station software into the relevant locations, where required;
- f) Providing additional training sessions to RailCorp personnel on the operation and maintenance of the Access system, where required;
- g) Providing 24 hour x 7 days technical support for the equipment and application software during the pilot including telephone support with response times of less than 15 minutes and physical presence within 120 minutes at any RailCorp city or suburban; and
- h) Providing the End of Phase report that includes lessons learnt and recommendations for Rollout to the Rest of the Fleet.

E7.3 Lock Installation

Upon approval by the Engineer, the Contractor shall progressively install new electronic security locks on the target Fleet. It is likely that the new electronic security locks will be installed on the Fleet in groups by Set type within operating Sector. The Contractor shall:

- a) Perform the installation work outside of the peak train operating times whilst the trains are stabled at stabling yards.
- b) Ensure all finish cover moulds, cover pressings and panel work joints are neatly made without recourse to use of filler material or additional cover plates.
- c) Schedule and sequence the work activities so that the scope is completed during off-peak periods whilst the trains are stabled overnight. Typically this means that tasks cannot take more than 4 hours on the train.

E7.4 Removal and Restoration

RailCorp at its sole discretion may decide not to proceed with further implementation and in this event the Contractor shall remove the locks and restore the Sets to their former condition.

E8 Rollout to the Rest of Fleet

E8.1 Objectives

The objectives of the Rollout are to:

- a) Improve the security of RailCorp's personnel and fleet through the use of electronic keying systems; and
- b) Minimise operational and reliability impacts through this improvement of security.

E8.2 Generic Rollout Scope

Upon approval from the Engineer the Contractor shall progressively install new electronic security on the remaining RailCorp Fleet. The Generic Rollout will adopt a consistent approach to that implemented in the Pilot – Phase 2, potentially including lessons learnt and recommendations resulting from the End of Phase report.

E9 Through Life Support

The Contractor shall supply Through Life Support for the Secure Access System vendor specific software and associated updated documentation as required in Clause 6.3.3.

E9.1 Latest versions and supporting documentation.

- a) The contractor is to provide RailCorp and its contractors with the latest versions, upgrades and documentation relating to all vendor specific software used on servers, authorisation stations, administrative PCs, locks and keys.

Note that RailCorp reserves the option to implement product upgrades..

E9.2 RailCorp, or its contractors, may also engage the contractor to provide Through Life support for all or part of:

E9.2.1 Technical Support

- i. Provision of 24 hour x 7 day telephone support for the equipment and/or application software;
- ii. Provision of onsite support at locations where Authorisation Stations and administration PCs have been installed;
- iii. Provision of a physical presence within 120 minutes at any location where an Authorisation Station has been installed;
- iv. Provision of any additional assistance required for the further installation and configuration of supporting applications on RailCorp servers as may be required.

E9.2.2 Maintenance of:

- i. Hardware
 - a. Authorisation Stations

- b. Electronic Locks
- c. Other vendor specific hardware (e.g.; Hubs)
 - ii. Additional software.

E9.2.3 Special Tools

- i. The Contractor shall supply all special tools and support equipment assessed by the Contractor as being necessary to permit RailCorp and its contractors to conduct repairs.
- ii. The Contractor shall provide a schedule of special tools and equipment, briefly stating the purpose of each item and whether it requires periodic calibration, testing or maintenance.

E10 Quantities

Table 1 is an estimate of the number of Crew Cab locks for each type of Set. Table 2 is an estimated of the number of keys that will be required for the Rollout across all Sectors. Table 3 provides an estimate of the number of Authorisation Stations at each depot. Table 4 describes the Sectors in the RailCorp network.

No	Train	Code	# Locks	Total Locks
71	Millennium	M Set (a)	8	568
39	Tangara	G Set (a)	4	156
62	Oscar	H Set (a)	8	496
186	Tangara	T Set (a)	4	744
28	C Set	C Set (a)	4	112
80	K Set	K Set (a)	4	320
125	V Set	V Set (a)	4	500
271	L & R & S Sets		3	813
28	Endeavour		1	28
14	Hunter		3	21
			TOTAL	3758

Table 1: Estimate only of Initial Lock Requirements

Personnel	Total Keys
Drivers	1600
Guards	1300
Cleaners	600
Maintenance	500
Equipment Examiners	40
Security	600
Station Staff	600
Recovery Staff	20
Emergency Services	200
TOTAL	5460

Table 2: Estimate only of Initial Key Requirements

Type	Estimated Number of Supplier Specific Authorisation Equipment
Maintenance	25
Cleaners	35
Crew	35
Stations Staff	5
Security	25
	125

Table 3: Estimate only of Number of Authorisation Station Equipment

Sectors #	Sectors
1	Illawarra and Eastern Suburbs Line
2	Bankstown, Inner West, East Hills, Airport and South Lines
3	Northern, Western, Richmond, Carlingford and North Shore Lines

Table 4: RailCorp Sectors

E11 Software and Media Licenses

The Contractor shall provide original software, media and licenses permitting computer resources to be supported by RailCorp and/or its contractors. The Software licenses shall permit RailCorp or its contractors to use the software without further recourse or maintenance fees to the Contractor.

The mandatory obligations detailed in Clause E9 require the Contractor to provide RailCorp and its contractors with the latest versions, upgrades and documentation relating to all vendor specific software used on servers, authorisation stations, administrative PCs , locks and keys. Note that RailCorp reserves the option to implement these upgrades.