WAKA KOTAHI
NZ TRANSPORT AGENCY

COMMISSIONING AND HANDOVER REQUIREMENTS

ITS Core Requirements Standard

0.5
24 FEBRUARY 2023

Draft

New Zealand Government

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More information
If you have further queries, contact the ITS S&S team via email: itsspec@nzta.govt.nz

More information about intelligent transport systems (ITS) is available on the Waka Kotahi website at https://www.nzta.govt.nz/its

This document is available on the Waka Kotahi website at https://www.nzta.govt.nz/itsspecs

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1 DOCUMENT CONTROL

1.1 Document information

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1.2 Document owner

Role Head of Technology Engineering

Organisation Waka Kotahi

1.3 Document approvers

This table shows a record of the approvers for this document.

Approval date	Approver	Role	Organisation
DD/MM/YYYY			

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1.4 Version history – major changes

Document version control is the process of tracking and managing different versions (or drafts) of a document to easily identify the current iteration of a file.

This table shows a record of all major (published) versions of this document (for Waka Kotahi use only). To record minor versions (author updates, amendments etc), go to section 11 Full version history.

Version	Date	Author	Role and organisation	Reason
1.0	DD/MM/YYYY			
2.0	DD/MM/YYYY			
3.0	DD/MM/YYYY			

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2 TERMINOLOGY USED IN THIS DOCUMENT

Term	Definition
DRAFT	The document is being written and cannot be used outside of Waka Kotahi.
PENDING	The document has been finalised and is pending approval and ratification by Waka Kotahi. It can be used for procurement at this status.
RATIFIED	The document is an official Waka Kotahi document. Road controlling authorities are obliged to follow a document with this status.
RETIRED	The document is obsolete, and/or superseded.
DLP	Defect liability period
FAT	Factory acceptance testing
I&H	Implementation and handover
IP	Internet Protocol
ITS	Intelligent transport systems
MAC	Media access control
O&M	Operations and maintenance
RACI	Responsible, accountable, consulted, informed (model)
RAMM	Road assessment and maintenance management software
SHDOM	State highway database operation manual
SAT	Site acceptance testing
TOC	Transport operations centre
PVT	Production validation testing
I&H	Implementation and handover

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3 OVERVIEW AND OUTCOMES

This section defines the operational outcomes for intelligent transport systems with respect to the transport network.

3.1 Purpose

The purpose of this standard is to specify the core requirements and acceptance criteria for testing, commissioning, handover and maintenance for intelligent transport systems (ITS) equipment.

3.2 Overview

Core standards describe common requirements and obligations and are applicable across all Waka Kotahi ITS design standards. Core specifications define common requirements and are applicable across all Waka Kotahi ITS delivery specifications. They provide clarity for each core subject area by managing duplication of common requirements within the design standards and delivery specifications.

This core requirements standard provides the requirements for commissioning and handover of all ITS equipment installed over the Waka Kotahi State Highway network into operations and maintenance (O&M).

3.2.1 Waka Kotahi ITS class

000 Core requirements definition: *Information common to more than one standard or specification in order to manage quality*.
All class definitions can be found here:
https://www.nzta.govt.nz/roads-and-rail/intelligent-transport-systems/standards-and-specifications/its-current-interim-and-legacy-standards-and-specifications/class-definitions-for-its-equipment-and-systems/

3.3 Scope

The scope of this standard includes the entry and exit criteria that must be achieved at each of the following key stages:

- Stage 1: Pre-shipping acceptance
- Stage 2: Factory acceptance testing (FAT)
- Stage 3: Site acceptance testing (SAT)
- Stage 4: Production validation testing (PVT)
- Stage 5: Practical completion
- Stage 6: Defects liability

This document does not cover installation procedures for ITS equipment.

Familiarisation with this document shall enable the user to understand the correct sequence of events needed to ensure that the commissioning of ITS equipment is implemented successfully.

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3.4 Outcomes

This standard seeks to achieve the following outcomes for ITS equipment:

- The equipment is operational and can be maintained in accordance with national standards and practice.
- The equipment operates as intended by manufacturers and Waka Kotahi requirements whilst is compatible with the current systems.
- The equipment is set up and tested prior to operation.
- Communications network testing, system integration and performance monitoring is carried out prior to live operations.
- Efficient commissioning and handover with clear requirements.
- Seamless handover of equipment into operations and maintenance (no surprises) and early notification of the requirements to operate and maintain the equipment and / or systems.
- Optimisation of operational availability of equipment, while minimising whole-of-life costs and protecting capital investment.
- Expectations with respect to the defect liability period (DLP) and maintenance handover are met.
- Handover documentation is complete and available (e.g. as-builts, test certificates, asset records, configuration data, etc.), equipment is configured correctly for operational use, testing is complete and signed off, and site audits are complete and signed off.
- All tests, training and documents have been completed to achieve signoff from Waka Kotahi of an Operational Acceptance Criteria (OAC) Checklist.

It is therefore a contractual requirement for all projects that provide or install ITS equipment and / or systems to comply with the O&M requirements defined in this core requirements standard. Failure to comply will mean that adequate whole-of-life maintenance and support requirements cannot be guaranteed.

This core requirements standard sets out a clear process to achieve the above outcomes while maintaining appropriate quality assurance checks throughout.

3.4.1 For users of the transport network

This ensures the ITS roadside equipment will operate as intended at the time it is commissioned and handed over into live operations and during its intended design life, minimising adverse impacts on the transport network and providing both consistency and reliability to users.

3.4.2 For road controlling authorities and transport operations centres

This core requirements standard will provide road controlling authorities (RCAs) and transport operations centres (TOCs) with confidence in the new infrastructure. It provides clarity regarding how to hand over ITS to O&M providers where equipment will be operated within a Waka Kotahi TOC. The combination of multi-level testing and expected outcomes will ensure minimal impact to network operations during the transitioning to live operations.

3.4.3 Whole-of-life considerations

It is important that there is consistency of hardware and communications protocols being integrated in the field, and that the equipment:

- Meets the requirements of the Waka Kotahi specifications and standards.
- Is supported by the manufacturer.
- Is available through more than one supplier where possible; and
- Is compliant with the current network communications protocol requirements for the asset type.

If a new type of equipment is proposed that is not included in Waka Kotahi ITS standards and specifications, it must go through testing by Waka Kotahi, to ensure compatibility with existing systems and functional requirements for operations.

3.4.4 Road asset maintenance management (RAMM)

Waka Kotahi maintains an ITS asset register that accurately captures the current state, location, condition and quantities of assets deployed on the state highway network. RAMM is the Waka Kotahi asset management tool used to record details of the existing condition and status of all road assets and street furniture. The Contractor shall request the relevant RAMM data collection spreadsheet from Waka Kotahi at the start of the contract. The information required to be collected for ITS assets includes but is not limited to:

1. Location details.
2. Asset type, subtype and description.
3. Support type.
4. Construction and maintenance contract numbers.
5. Maintenance Contractor.
6. Manufacturer, supplier, model and serial number.
7. Design life and purchase cost.
8. Installation date and DLP start and end dates.
9. Condition and risk rating.
10. Control system and communication medium.

Level 1 RAMM certification is a requirement for RAMM data collectors and level 2 RAMM certification is required for users who input data directly into the RAMM database, a requirement of the Waka Kotahi State highway database operation manual (SM050). Detailed guidance in terms of data requirements and collection rules is provided in SM050 Appendix 6: Inventory collection manual.

Note that from 2025, Waka Kotahi will be adopting the Asset Management Data Standards for roading assets.

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4 DESIGN FOR OPERATION

This section defines the core functionality required to support successful operation of the intelligent transport system.

4.1 Stages

The key stages of the ITS commissioning and handover process are outlined in Figure 1 below. This standard covers Stages 1 to 6.

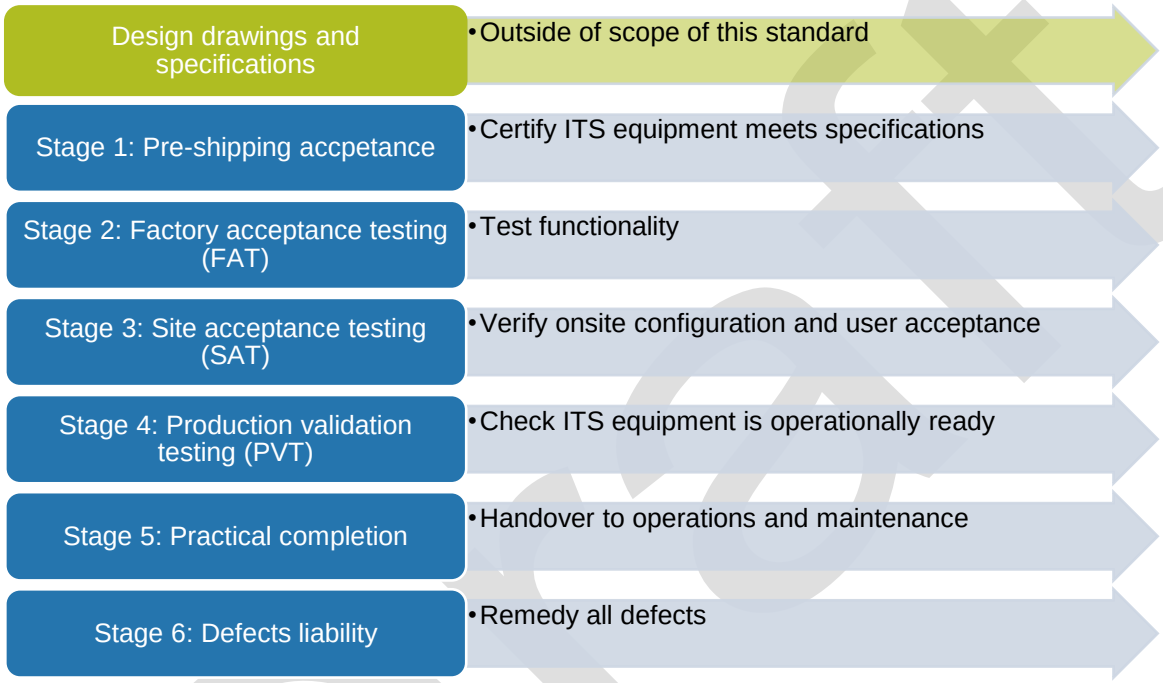

Figure 1. Scope of the commissioning and handover core requirements standard in relation to timeline

4.2 Pre-shipping acceptance

4.2.1 Purpose

The purpose of this stage is for the Contractor to certify that the ITS equipment, they plan on using, meets the requirements of relevant Waka Kotahi ITS specifications.

4.2.2 Pre-shipping acceptance stage requirements (entry criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Identify all ITS equipment as specified in the contract.
- Identify manufacturer(s) to supply the required ITS equipment.
- Confirm the Waka Kotahi ITS specifications and associated versions that the ITS equipment must comply with.
- Supply all required Waka Kotahi ITS specifications to manufacturer(s).

- Request the manufacturer(s) to confirm the ITS equipment complies with the Waka Kotahi ITS specifications either through verified certification documentation and/or test reports and results from an independent test laboratory. The independent test laboratory must be part of the agreed list from Waka Kotahi.
- If possible (from a security and quality assurance perspective), undertake factory acceptance testing (FAT) on the ITS equipment, in accordance with the requirements outlined in Section 4.3, during this pre-shipping acceptance stage.

4.2.3 Pre-shipping acceptance stage minimum objectives (exit criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Prepare a Pre-Shipping Acceptance Exit Report summarising the outcomes of this stage for all ITS equipment specified in the contract. The report shall include the following evidence:
    - Verified certification documentation and/or test reports and results from an independent test laboratory confirming all manufactured ITS equipment, to be installed as part of the contract, complies with the Waka Kotahi ITS specifications.
    - If FAT is performed during this pre-shipping acceptance stage, a FAT Test Exit Report is required in accordance with Section 4.3.

4.3 Factory acceptance testing (FAT)

4.3.1 Purpose

The purpose of this stage is for the Contractor to test the functionality of the ITS equipment.

In this stage, ITS equipment can be split into Commercially Off the Shelf (COTS) and bespoke equipment. COTS equipment can be defined as products that are easily obtainable, usually from general retailers. Bespoke equipment is usually produced specifically for a project. All bespoke equipment must complete the FAT. However, COTS equipment may not require FAT. Specific Commercially Off the Shelf ITS equipment that do not require FAT will be stated in the contract documentation or contractual notices. Any COTS equipment that is not exempt from FAT, will require FAT as outlined below.

4.3.2 FAT test stage requirements (entry criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Have a Pre-Shipping Acceptance Exit Report in accordance with Section 4.2.3.
- Receive ITS equipment in New Zealand (unless it is possible to perform FAT during the pre-shipping acceptance stage).
- Request and obtain FAT test cases from Waka Kotahi and prepare FAT test plan(s), which include:
    - Scope of the test.
    - A list of all test cases in required sequence.
    - Pass criteria.
    - Any limitations, assumptions, and constraints associated with the verification activity.
    - Any special location, or environmental considerations, if needed, for the conduct of the test activities.
    - Any other specific issue relevant to each test stage

- Obtain approval of the FAT test plan(s) from the Waka Kotahi authorised QA / ITS testing representative (note: Waka Kotahi requires 3 weeks to review FAT test plan(s)).
- Arrange necessary test resources and distribute test plans, and (if required) arrange Waka Kotahi supplied test environment(s) (i.e. Integrated Test Environment – ITE) to enable the ITS equipment to be connected to back-end systems to prove full functionality.
- Notify the Waka Kotahi authorised representative, in writing two weeks in advance, of intent to undertake the tests, so that the Waka Kotahi authorised QA / ITS testing representative (or other delegate) can attend and witness the tests, if required.

4.3.3 FAT test stage minimum objectives (exit criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Prepare a FAT Test Exit Report summarising the outcomes of this stage for all ITS equipment specified in the contract. The report shall include the following evidence:
    - Reference to FAT exemptions for any Commercially Off the Shelf (COTS) ITS equipment.
    - All agreed test cases were executed and passed to a satisfactory level, meeting the specified criteria defined in each test plan
    - All defects found were recorded and assigned a severity rating.
    - All major impact defects have been fixed and re-tested.
    - An assessment of any remaining open defects including how they will be treated and a schedule outlining the timeframes for treatment.
- Obtain sign-off of the FAT Test Exit report from a Waka Kotahi authorised QA / ITS testing representative.

4.4 Site acceptance testing (SAT)

4.4.1 Purpose

The purpose of this stage is to verify the ITS equipment is configured on site, operating in the local site environment, meets the user requirements and is approved by the user (i.e. TOC), as per the contract requirements. This stage is performed prior to any integration with the Waka Kotahi communications network (i.e. before it is connected into the live operations environment).

4.4.2 SAT test stage requirements (entry criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Have a FAT Test Exist Report in accordance with Section 4.3.3 and signoff from the Waka Kotahi authorised QA / ITS testing representative that all open defects outlined in the FAT Test Exist Report have been resolved.
- Install the ITS equipment on site as per the contract and latest IFC (issued for construction) drawings.
- Request and obtain relevant test cases for this stage from Waka Kotahi and prepare SAT test plan(s), which include:
    - Scope of the test.
    - A list of all test cases in required sequence.
    - Pass criteria.
    - Any limitations, assumptions, and constraints associated with the verification activity.

    - Any special location, or environmental considerations, if needed, for the conduct of the test activities.
    - Any other specific issue relevant to each test stage
- Obtain approval of the SAT test plan(s) from the Waka Kotahi authorised QA / ITS testing representative (note: Waka Kotahi requires 3 weeks to review SAT test plan(s)).
- Arrange necessary test resources and distribute test plans, and (if required) arrange Waka Kotahi supplied Waka Kotahi supplied test environment(s) (i.e. Integrated Test Environment – ITE) to enable the ITS equipment to be connected to back-end systems to prove full functionality onsite.
- Prepare and obtain approval for all site-specific Traffic Management Plans (TMPs) required for SAT.
- Notify the Waka Kotahi authorised QA / ITS testing representative, in writing two weeks in advance, of intent to undertake the tests, so that the Waka Kotahi authorised QA / ITS testing representative (or other delegate) and the relevant users (i.e. TOC) can attend and witness the tests, if required.
- Prepare any required operations and maintenance manual, and/or standard operating procedures (SOPs). Organise any required training.

Further stipulations during this stage include the following:

- All tests shall only be carried out between the hours of 10:00–15:00 Monday to Friday to ensure the tests do not impact on the normal day-to-day operation of either the communications or State Highway network or cause any undue concern to motorists. All testing needs to be confirmed with TOC to agree the time. However, dispensation may be granted by Waka Kotahi if these tests are undertaken in environments that are not accessible to the general public.
- Unless otherwise stated in the contract documents, tests that are required to be undertaken outside of normal working hours shall need to be organised a minimum of three weeks in advance of the test, to ensure all parties are available.

4.4.3 SAT test stage minimum objectives (exit criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Prepare a SAT Test Exit report summarising the outcomes of this stage for all ITS equipment specified in the contract. The report shall include the following evidence:
    - Installation of all ITS equipment has been done in accordance with contract and latest IFC drawings.
    - Electrical installation certificates with manufacturer’s declaration of conformity.
    - Completion of access, maintenance, safety and security audits / assessments of installed ITS equipment.
    - All agreed test cases were executed and passed to a satisfactory level, meeting the specified criteria defined in each test plan.
    - All defects found were recorded and assigned a severity rating.
    - All major impact defects have been fixed and re-tested.
    - An assessment of any remaining open defects including how they will be treated and a schedule outlining the timeframes for treatment.
- Obtain sign-off of the SAT Test Exit report from the Waka Kotahi authorised QA / ITS testing representative.
- Obtain user (i.e. TOC) acceptance sign-off.

4.5 Production validation testing (PVT)

4.5.1 Purpose

The purpose of this stage is to connect the ITS equipment with the Waka Kotahi communications network and check it is operationally ready prior to going live.

4.5.2 PVT test stage requirements (entry criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Have a SAT Test Exist Report in accordance with Section 4.4.3, user acceptance signoff and signoff from the Waka Kotahi authorised QA / ITS testing representative that all open defects outlined in the SAT Test Exist Report have been resolved.
- Configure and integrate ITS equipment into the Waka Kotahi communications network. Provide details of all assets that are being connected, including:
    - Equipment type.
    - Manufacturer.
    - Serial number.
    - Communication path.
    - Internet Protocol (IP) address.
    - Media access control (MAC) address.
- Notify the Waka Kotahi authorised QA / ITS testing representative, in writing two weeks in advance, of when the site will be ready to undertake PVT. The Waka Kotahi authorised QA / ITS testing representative will manage the PVT.
- Prepare and obtain approval for all site-specific Traffic Management Plans (TMPs) required for PVT.
- Maintain a record of any defects found during PVT.

4.5.3 PVT test stage minimum objectives (exit criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Provide evidence of the following:
    - All defects found were recorded and assigned a severity rating.
    - All major impact defects have been fixed and re-tested.
    - An assessment of any remaining open defects including how they will be treated and a schedule outlining the timeframes for treatment.
- Have written confirmation from the Waka Kotahi authorised QA / ITS testing representative that PVT was successfully completed.

4.6 Practical Completion

4.6.1 Purpose

The purpose of this stage is to obtain Practical Completion, and handover the ITS equipment into live operations and maintenance by the TOC.

4.6.2 Practical Completion stage requirements (entry criteria)

Unless otherwise stated in the contract documentation or contractual notices, the Contractor shall:

- Have written confirmation from the Waka Kotahi authorised QA / ITS testing representative that PVT was successfully completed and signoff from the Waka Kotahi authorised QA / ITS testing representative that all open defects found during PVT have been resolved.
- Prepare and obtain approval, from a Waka Kotahi authorised QA / ITS testing representative, of a Defects Liability Period (DLP) Plan that outlines the procedure and response time for the Contractor to repair defects found during the DLP following Practical Completion (refer to Section 6.1 for more information).
- Prepare and obtain approval, from a Waka Kotahi authorised representative, of a 28-day test plan as defined in Section 6.1.2.
- Arrange Practical Completion inspections with the Waka Kotahi authorised representative.

4.6.3 Practical Completion stage minimum objectives (exit criteria)

Prior to Practical Completion of the ITS equipment being issued, the Contractor shall:

- Have a completed and signed Operational Acceptance Criteria (OAC) Checklist from Waka Kotahi.
- Provide evidence of the following:
    - An approved operations and maintenance manual.
    - Completion of operator training, including personal certificates, if required.
    - Completion of maintenance training, including personal certificates, if required.
    - An approved Defects Liability Period (DLP) Plan.
    - A successful Practical Completion inspection.
    - Completion of a security audit of the ITS equipment (e.g. all keys have been handed over).
    - A successful 28-day test of the ITS equipment as outlined in Section 6.1.2.
- Prepare and deliver all required data and documentation as required in the contract and in accordance with the Waka Kotahi standard PSF 3G – SMO 30. Unless otherwise stated in the contract documentation or contractual notices, this data and documentation shall include the following as a minimum:
    - As-built documentation: All as-built drawings shall comply with the Waka Kotahi standard for As-builts. The as-builts must comply with the Waka Kotahi site naming conventions and should contain the following, which have been certified by a Waka Kotahi authorised representative:
        - Site drawings – marked up by the contractor.
        - Fibre-optic information.
        - Power supply details.
        - Cabinet wiring diagrams.
        - Structural designs – marked up by the contractor.
        - Quantity list of all assets.
    - Certification and test results:
        - Pre-Shipping Acceptance Exit Report, FAT Test Exit Report, SAT Test Exit Report.
        - Civil construction reports.
        - Safety audit report.
        - Producer statements.
        - Electrical certificates.
    - Spare parts information, if required by the contract:

        - List of critical spare parts.
        - List of long lead time spare parts.
    - Software / firmware:
        - Firmware version list.
        - Copies of all current firmware.
        - Special instructions of software use and requirements.
        - Source code for PLCs. Note that all software must allow use access to the asset (e.g. to upgrade firmware)
    - Site data
        - System configuration information.
        - GPS coordinates.
        - Full equipment list.
        - Warranty details of all assets

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5 DESIGN FOR SAFETY

Design for safety is not applicable for commissioning and handover but should form an integral part of the detailed design.

Safety in Design is important for safe maintenance access for ITS installations as the sites are often critical to the safe operation of the road corridor. Rapid access to assist is therefore needed without the requirement for traffic management.

All stages in the process must comply with the latest version of Waka Kotahi ITS core requirements standard: Health and safety requirements, and a safety audit (including evidence of resolution of identified issues) is also required as part of the handover.

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6 DESIGN FOR MAINTAINABILITY

This section defines the core requirements to ensure the intelligent transport system can be maintained.

6.1 Defect liability period (DLP)

Following Practical Completion, a DLP will be enforced for a time period determined at the start of the contract. During this time, the Contractor shall remedy all defects detected during the Practical Completion inspections and any subsequently picked up during the remaining DLP, in accordance with the DLP Plan prepared as part of Practical Completion. The DLP is effective from the day the equipment goes live (i.e. physically in operation and functioning within the Waka Kotahi communications network).

A critical failure of the equipment may trigger the DLP to be reset, as defined in the contract documentation or contractual notices. In these cases, a new DLP shall be effective from the day the equipment goes live again following the replacement of the equipment or remediation of the critical failure. The new DLP will be enforced for the time period stated in contract documentation or contractual notices.

6.1.1 Maintenance requirements for new assets

Prior to Practical Completion, the Contractor shall be responsible for the general maintenance of all assets. For larger projects, the Contractor may be asked to provide a maintenance facility for an agreed period of time following Practical Completion.

This service is to include all preventative maintenance and fault rectification work undertaken in accordance with the agreed maintenance regime service response and resolve times in accordance with the contract documentation or contractual notices. To ensure that asset warranties are not compromised, it is important that the maintenance requirements of individual assets are supplied by the contractor prior to the installation of the asset, and that these requirements are communicated in a timely fashion to the organisation allocated to undertake maintenance.

During this period, the Contractor is also responsible for capturing any changes to the deployed asset base, including permanent replacement of any components recorded in RAMM, and communicating these changes on a monthly basis to the TOC.

6.1.2 28-day test

Prior to final handover to the maintenance organisation, a defined fault-free operation period of 28 days will need to occur. The requirements of the 28-day fault-free period shall be dependent on the asset type and will be agreed at the start of the contract. A level of faults of varying criticality may occur during this period, which may mean that the equipment can still be classified as fault-free. This shall be agreed with the Waka Kotahi authorised QA / ITS testing representative prior to the start of the 28-day fault-free period.

Fault events that occur or events that inhibit the assets from functioning correctly will be examined to determine the root cause, and any issues deemed to be the responsibility of the asset will be classed as a failure. Upon resolution of the identified fault, the 28-day test will start again. Once 28 days of fault-free operation has been reached, the assets are able to be handed into operational maintenance.

6.1.3 Maintenance handover

Formal handover of the system and associated assets into operational maintenance is dependent on the arrangements agreed to at the start of the contract. Once formal handover occurs, the Contractor is no longer liable for any maintenance requirements, though they are still accountable to respond to and remedy any defects under the DLP.

Prior to final handover, the following will need to be provided to Waka Kotahi:

- resolution report of all defects
- maintenance records of all assets and systems
- fault/performance records of all assets (28-day test).

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7 DESIGN FOR SECURITY

Design for security is not applicable for commissioning and handover but should be considered as part of the detailed design.

Nevertheless, all equipment will need to meet the security expectations in the latest versions of the relevant ITS design standards and obtain signoff of the Operational Acceptance Criteria (OAC) Checklist, which includes security. A security audit is required to obtain Practical Completion.

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8 APPENDIX A

To be defined

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Once downloaded this document is not controlled and may not be the latest version.

9 REFERENCES

This section lists all external and Waka Kotahi references included in this document.

9.1 Industry standards

Standard number/name	Source	Licence type and conditions

9.2 Waka Kotahi standards, specifications and resources

9.2.1 Standards and specifications

See the Waka Kotahi website for the latest versions of the relevant ITS design standards and delivery specifications, and the core requirements listed below:

Document name
ITS core requirements standard: Health and safety requirements
ITS core requirements standard: Minimum requirements for ITS

9.2.2 Resources

Document name/code	Waka Kotahi website link
State highway database operation manual (SM050)	https://www.nzta.govt.nz/resources/state-highway-database-operation-manual/
SM050 Appendix 6: Inventory collection manual	https://www.nzta.govt.nz/assets/resources/state-highway-database-operation-manual/docs/SM050-appendix-6.pdf

9.3 ITS standard drawings

See the Waka Kotahi website for the latest versions of the ITS standard drawings listed below.

Drawing number

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10 CONTENT TO BE REDIRECTED

This section records any circumstances where content from this document will be reclassified and moved into future documents. This table is then updated with a reference to the new location.

Section reference	Section name	Future document	Class
Error! Reference source not found.	FAT key activities, deliverables and responsibilities	FAT test case	03
Error! Reference source not found.	FAT key activities, deliverables and responsibilities	ITS minimum core requirements standard	000
Error! Reference source not found.	SAT key activities, deliverables and responsibilities	Network operations protocols	012
Error! Reference source not found.	SAT key activities, deliverables and responsibilities	SAT test case	03
Error! Reference source not found.	I&H key activities, deliverables and responsibilities	UAT test case	03
5	Design for safety	ITS health and safety core requirements standard	000

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11 FULL VERSION HISTORY

This table shows the full history of changes made to this document, both minor and major, in chronological order, since the document was first authored.

Minor versions are numbered 0.1, 0.2 etc until such point as the document is approved and published, then it becomes 1.0 (major version). Subsequent edited versions become 1.1, 1.2 etc, or if it's a major update 2.0, and so on.

Version	Date	Author	Role and organisation	Reason
Draft R0	22/09/2010	Tom Harris Jamie French	Senior Design Engineer, WSP Opus Beca	ITS draft specifications issue
Draft R1	28/01/2010	Jamie French	Beca	Supply of software source code removed, section 6.4.8
Draft R2	19/12/2011	NG		RAMM database requirements, sections 6.6, 7.1, 7.2
Draft R3	16/01/2012	MF & NG		Multiple amendments
Draft R4	15/02/2012	Bruce Walton	Beca	Provisional
0.1	29/07/2020	Final Word	Editorial services	Transfer draft document to latest ITS core requirements standard template
0.2	14/08/2020	ITS Working Group	Waka Kotahi	Check this new draft in the new template, redirect content, address queries
0.3	13/04/2022	Waldo Posthumus Peter Algie Blair Monk	Aurecon	Added in a RACI component and updated the overall content of the document to reflect the RACI
0.4	10/05/2022	Final Word	Editorial services	Proofread second draft
0.5	24/02/2023	Peter Algie Blair Monk	Aurecon	Update to include comments and agreed edits during workshops with expert panel and agreed edits from workshop with QA and testing team.

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