



COMMISSIONING AND HANDOVER REQUIREMENTS

Intelligent Transport Systems (ITS) Core Requirements
Standard

21 DECEMBER 2023
VERSION 0.12

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More information

If you have further queries, contact the Intelligent Transport Systems Standards and Specifications (ITS S&S) team via email: itsspec@nzta.govt.nz

More information about ITS is available on the NZTA website at <https://www.nzta.govt.nz/its>

This document is available on the NZTA website at <https://www.nzta.govt.nz/itsspecs>

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1.8, 03/11/2021

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1 OVERVIEW AND OUTCOMES

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

1.1 Purpose

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

1.1.1 NZTA ITS class

000 Core requirements definition: *Information common to more than one standard or specification in order to manage quality.*

[Class definitions](#)

1.2 Scope

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

- i. Stage 1: Pre-shipping acceptance
- ii. Stage 2: Factory acceptance testing (FAT)
- iii. Stage 3: Site acceptance testing (SAT)
- iv. Stage 4: Production validation testing (PVT)
- v. Stage 5: Practical completion
- vi. 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.

1.3 Outcomes

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

- i. The equipment is operational and can be maintained in accordance with national standards and practice.
- ii. The equipment operates as intended by consultant and the client requirements, and it is compatible with the current systems.
- iii. The equipment is set up and tested prior to operation.
- iv. Communications network testing, system integration and performance monitoring is carried out prior to live operations.
- v. Commissioning and handover are efficient, and the requirements are clear.
- vi. Handover of equipment into operations and maintenance is seamless (no surprises), and the requirements to operate and maintain the equipment and/or systems are provided before handover.
- vii. Operational availability of equipment is optimised while minimising whole-of-life costs and protecting capital investment.

- viii. Expectations with respect to the defect liability period (DLP) and maintenance handover are met.
- ix. Handover documentation is complete and available (eg as-builts, test certificates, asset records, configuration data), equipment is configured correctly for operational use, testing is complete and signed off, and site audits are complete and signed off.
- x. All tests, training and documents have been completed to achieve signoff from the client 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 operations and maintenance 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 (QA) checks throughout.

1.3.1 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:

- i. meets the requirements of the client specifications and standards
- ii. is supported by the supplier
- iii. is available through more than one supplier where possible
- iv. 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 NZTA ITS standards and specifications, it must go through testing by the client to ensure compatibility with existing systems and functional requirements for operations.

1.3.2 Road assessment and maintenance management (RAMM)

NZTA 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 NZTA asset management tool used to record details of the existing condition and status of all road assets and street furniture. The Supplier shall request the relevant RAMM data collection spreadsheet from The Client at the start of the contract. The information required to be collected for ITS assets includes but is not limited to:

- i. location details
- ii. asset type, subtype and description
- iii. support type
- iv. construction and maintenance contract numbers
- v. maintenance contractor
- vi. manufacturer, supplier model and serial number
- vii. design life and purchase cost
- viii. installation date and DLP start and end dates
- ix. condition and risk rating
- x. 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 NZTA *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*.

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2 DESIGN FOR OPERATION

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

2.1 Stages

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

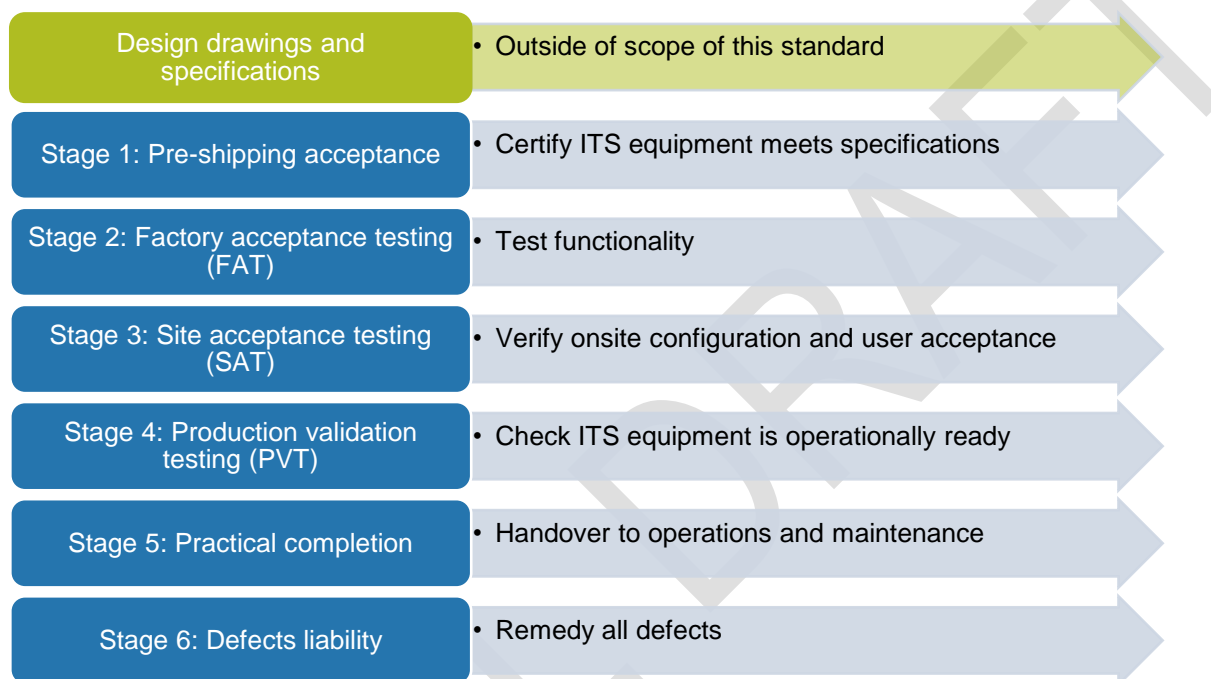


Figure 1. Scope of the commissioning and handover core requirements standard in relation to timeline

2.2 Pre-shipping acceptance

2.2.1 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 ITS specifications.

2.2.2 Pre-shipping acceptance stage requirements (entry criteria)

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

- i. identify all ITS equipment as specified in the contract
- ii. identify supplier (s) to supply the required ITS equipment
- iii. confirm the NZTA ITS specifications and associated versions that the ITS equipment must comply with
- iv. supply all required NZTA ITS specifications to supplier (s)
- v. request the supplier (s) to confirm the ITS equipment complies with the NZTA 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 the client.

- vi. if possible (from a security and QA perspective), undertake FAT on the ITS equipment, in accordance with the requirements outlined in section 2.3, during this pre-shipping acceptance stage.

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

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

- i. 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:
 - 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 NZTA ITS specifications
 - if FAT is performed during this pre-shipping acceptance stage, a FAT Exit Report in accordance with section 2.3.

2.3 Factory acceptance testing (FAT)

2.3.1 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 commercial 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. Specific COTS ITS equipment that does 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.

2.3.2 FAT stage requirements (entry criteria)

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

- i. have a Pre-Shipping Acceptance Exit Report in accordance with section 2.2.3
- ii. receive ITS equipment in New Zealand (unless it is possible to perform FAT during the pre-shipping acceptance stage)
- iii. request and obtain FAT cases from the client and prepare FAT 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
- iv. obtain approval of the FAT plan(s) from the client.
- v. arrange necessary test resources and distribute test plans, and (if required) arrange the client supplied test environment(s) (ie integrated test environment) to enable the ITS equipment to be connected to back-end systems to prove full functionality
- vi. notify the client, in writing two weeks in advance, of intent to undertake the tests so that the client can attend and witness the tests, if required.

2.3.3 FAT stage minimum objectives (exit criteria)

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

- i. prepare a FAT Exit Report summarising the outcomes of this stage for all ITS equipment specified in the contract – the report shall include:
 - reference to FAT exemptions for any COTS ITS equipment
 - evidence that all agreed test cases were executed and passed to a satisfactory level, meeting the specified criteria defined in each test plan
 - evidence that all defects found were recorded and assigned a severity rating
 - evidence that 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 (Note: An example test exit report can be seen in Appendix A)
- ii. obtain signoff of the FAT Exit Report from a Client (Waka Kotahi authorised QA/ITS testing representative).

2.4 Site acceptance testing (SAT)

2.4.1 Purpose

The purpose of this stage is to verify the ITS equipment is configured on site, operating in the local site environment, and meets the Maintainer's and Operator's requirements, as per the contract requirements. This stage is performed prior to any integration with the client communications network (ie before it is connected into the live operations environment).

2.4.2 SAT stage requirements (entry criteria)

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

- i. have a FAT Exit Report in accordance with section 2.3.3 and signoff from the client authorised QA/ITS testing representative that all open defects outlined in the FAT Exit Report have been resolved
- ii. install the ITS equipment on site as per the contract and latest issued for construction (IFC) drawings.
- iii. request and obtain relevant test cases for this stage from the client and prepare SAT 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
- iv. obtain approval of the SAT plan(s) from the Client.
- v. arrange necessary test resources and distribute test plans, and (if required) arrange the client supplied test environment(s) (ie integrated test environment) to enable the ITS equipment to be connected to back-end systems to prove full functionality on site
- vi. prepare and obtain approval for all site-specific traffic management plans required for SAT
- vii. notify the client authorised QA/ITS testing representative, in writing two weeks in advance, of intent to undertake the tests so that the Client can attend and witness the tests, if required
- viii. prepare any required operations and maintenance manual and/or standard operating procedures

- ix. organise any required training.

Further stipulations during this stage include the following:

- i. All tests shall only be carried out between the hours of 10:00 and 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 the Network Operator to agree the time. However, dispensation can be considered to be granted by the client if these tests are undertaken in environments that are not accessible to the general public.
- ii. 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.

2.4.3 SAT stage minimum objectives (exit criteria)

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

- i. prepare a SAT Exit Report summarising the outcomes of this stage for all ITS equipment specified in the contract – the report shall include:
 - evidence that installation of all ITS equipment has been done in accordance with the contract and the latest IFC drawings
 - electrical installation certificates with supplier's declaration of conformity
 - evidence of completion of access, maintenance, safety and security audits/assessments of installed ITS equipment
 - records that all agreed test cases were executed and passed to a satisfactory level, meeting the specified criteria defined in each test plan
 - proof that all defects found were recorded and assigned a severity rating
 - records that 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 (Note: An example test exit report can be seen in Appendix A)
- ii. obtain signoff of the SAT Exit Report from the client
- iii. obtain Operator acceptance signoff.

2.5 Production validation testing (PVT)

2.5.1 Purpose

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

2.5.2 PVT stage requirements (entry criteria)

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

- i. have a SAT Exit Report in accordance with section 2.4.3, user acceptance signoff, and signoff from the client authorised QA/ITS testing representative that all open defects outlined in the SAT Exit Report have been resolved

- ii. configure and integrate ITS equipment into the client communications network and provide details of all assets that are being connected, including:
 - equipment type
 - supplier
 - serial number
 - communication path
 - Internet Protocol (IP) address
 - media access control (MAC) address
- iii. notify the client authorised QA/ITS testing representative, in writing two weeks in advance, of when the site will be ready to undertake PVT, which will be managed by the client authorised QA/ITS testing representative
- iv. prepare and obtain approval for all site-specific traffic management plans required for PVT
- v. maintain a record of any defects found during PVT.

2.5.3 PVT stage minimum objectives (exit criteria)

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

- i. provide evidence that:
 - all defects found were recorded and assigned a severity rating
 - all major impact defects have been fixed and re-tested
 - an assessment was made of any remaining open defects, including how they will be treated and a schedule outlining the timeframes for treatment
- ii. have written confirmation from the client authorised QA/ITS testing representative that PVT was successfully completed.

2.6 Practical completion

2.6.1 Purpose

The purpose of this stage is to obtain practical completion, and hand over the ITS equipment into live operations and maintenance.

2.6.2 Practical completion stage requirements (entry criteria)

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

- i. have written confirmation from the Client that PVT was successfully completed and signoff from the Client that all open defects found during PVT have been resolved
- ii. prepare and obtain approval, from a Client, of a 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 4.1 for more information).
- iii. prepare and obtain approval, from a client authorised representative, of a 28-day test plan as defined in section 4.1.2
- iv. arrange practical completion inspections with the client authorised representative.

2.6.3 Practical completion stage minimum objectives (exit criteria)

Prior to practical completion of the ITS equipment being issued, the Contractor shall:

- i. have a completed and signed the OAC checklist from client
- ii. provide evidence of:
 - 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 DLP plan
 - a successful practical completion inspection
 - completion of a security audit of the ITS equipment (eg all keys have been handed over)
 - a successful 28-day test of the ITS equipment as outlined in section 4.1.2
- iii. prepare and deliver all required data and documentation as required in the contract and in accordance with the NZTA *State highway professional services contract proforma manual (SM030) Capital project handover checklist (PSF 3g)*. 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 forthcoming Waka Kotahi standard for as-builts. The as-builts must comply with the Client site naming conventions and should contain the following, which have been certified by a client:
 - 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 Exit Report, SAT 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 programmable logic controllers (PLCs) (all software must allow user access to the asset – eg to upgrade firmware)
 - Site data:
 - System configuration information
 - GPS coordinates
 - Full equipment list
 - Warranty details of all assets

2.7 Defects liability

This stage is described in section 4.1 'Defect liability period (DLP)'.

3 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.

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4 DESIGN FOR MAINTAINABILITY

This section defines the core requirements to ensure the ITS can be maintained.

4.1 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 (ie physically in operation and functioning within the client communications network).

If critical failure of the equipment is triggered then the DLP shall 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.

4.1.1 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 shall 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 final Maintainer and Operator.

4.1.2 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 can occur during this period, which means that the equipment can still be classified as fault-free. This shall be agreed with the client 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 have been reached, the assets are able to be handed into operational maintenance.

4.1.3 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 the client:

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

5 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 OAC checklist, which includes security. A security audit is required to obtain practical completion.

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6 APPENDIX A

6.1 Example of Test Exit Report template

Test Exit Report

<Project – Phase>

REVISION HISTORY

Version	Date	Details	Author

APPROVERS

Version <x.y>

Approved by	Date	Approval

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1. INTRODUCTION

1.1 Artefact purpose

The purpose of the Test Exit Report (TER) is to <complete here adding your description of what is the purpose of this document>.

1.2 Project documentation

1.3.1 Reference documents

Ref#	Reference	Document Title

1.3.2 Relevant standards

Reference	Document Title

1.3 Terms and abbreviations

Term	Definition

2. PROJECT OVERVIEW

<add here a brief introduction about this project – no more than one page>

3. TEST RESULTS

This section provides an overview of test results.

3.1 Installation

<this section should summarise results showing that the installation of all ITS equipment has been done in accordance with contract and latest IFC drawings.>

<this section shall also provide references to electrical installation certificates with Contractor's declaration of conformity>

<this section shall also provide references to assessments that state completion of access, maintenance, safety, and security audits/assessments of installed ITS equipment>

<if no installation is required, then you can mark this session as Not Applicable>

3.2 Test cases

<add here charts and or tables summarising test results>

<you should also add a reference to where the test cases and results are stored>

3.3 List of defects

<add the list of all defects raised related to this report>

Type	Issue key	Summary	Status

3.4 Outstanding issues

<each outstanding issue should be formally accepted>

<add here the action plans to remediate the outstanding issues>

Issue key	Summary	Action plan	Responsible	End date

3.5 Test Exit Criteria – Assessment

<List here the Test Exit Criteria according to NZTA Commissioning and Handover Standard>

<Should other specific Test Exit Criteria be added by the Test Approach document or any other requirement, the additional Test Exit Criteria shall be added to this section>

<For each Test Exit Criterion, you should state if the criterion was met>

3.6 Lessons learnt

<for future projects, please add to this section what you learned from this project or phase>

What went well ✓

1. <Lesson #1>
2. <Lesson #2>
3. <Lesson #N>

What didn't go well – improvement opportunities

1. <Lesson #1>
2. <Lesson #2>
3. <Lesson #N>

7 REFERENCES

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

7.1 Industry standards

Standard number/name	Source	Licence type and conditions

7.2 NZTA standards, specifications and resources

7.2.1 Standards and specifications

See the [Waka Kotahi website](#) for the latest versions of the relevant ITS core requirements standards listed below:

Document name
ITS core requirements standard: Health and safety requirements
ITS core requirements standard: Requirements for intelligent transport systems

7.2.2 Resources

Document name/code
State highway professional services contract proforma manual (SM030) – Capital project handover checklist (PSF 3g)
SM050 Appendix 6: Inventory collection manual

7.3 ITS standard drawings

See the [NZTA website](#) for the latest versions of the ITS standard drawings listed below.

Drawing number

8 TERMINOLOGY USED IN THIS DOCUMENT

Term	Definition
DRAFT	The document is being written and cannot be used outside of NZTA.
PENDING	The document has been finalised and is pending approval and ratification by NZTA. It can be used for procurement at this status.
RATIFIED	The document is an official NZTA document. NZTA projects and other road controlling authorities connected to NZTA back-end systems must include this document in the contracts. The obligation to follow the requirements in this document would come from the inclusion of the S&S document in the contract.
RETIRED	The document is obsolete, and/or superseded.
NZTA	This is noted as being equivalent to the New Zealand Transport Agency.
COTS	Commercial off-the-shelf
DLP	Defect liability period
FAT	Factory acceptance testing
I&H	Implementation and handover
IFC	Issued for construction
IP	Internet Protocol
ITS	Intelligent transport systems
MAC	Media access control
OAC	Operational acceptance criteria
PLC	Programmable logic controller
PVT	Production validation testing
QA	Quality assurance
RACI	Responsible, accountable, consulted, informed (model)
RAMM	Road assessment and maintenance management software
SAT	Site acceptance testing

9 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
2.3	FAT key activities, deliverables and responsibilities	FAT case	03
2.3	FAT key activities, deliverables and responsibilities	ITS minimum core requirements standard	000
2.4	SAT key activities, deliverables and responsibilities	Network operations protocols	012
2.4	SAT key activities, deliverables and responsibilities	SAT case	03
3	Design for safety	ITS health and safety core requirements standard	000

10 DOCUMENT CONTROL

Document information

Document number	ITS-STND-CMH-202312
Previous document number/s (if applicable)	ITS-10-01
Document status	FINAL DRAFT
[IF RETIRED] New document details	
Online ISBN	
Document availability	The controlled version of this document can be accessed from https://www.nzta.govt.nz/roads-and-rail/intelligent-transport-systems/standards-and-specifications/its-current-interim-and-legacy-standards-and-specifications/

Document owner

Role ITS S&S Steering Committee
Organisation NZTA

Document approvers

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

Approval date	Approver	Role	Organisation
DD/MM/YYYY			

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	NZTA	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.
0.6	31/03/2023	Blair Monk	Aurecon	Update to include comments and agreed edits from Industry Feedback. Includes new appendix A.
0.7	04/04/2023	Matthew Bauer	Editor, Clear Edit NZ	Copyedit

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0.8	04/04/2023	Blair Monk	Aurecon	Response to Copyedit
0.9	17/04/2023	Matthew Bauer	Editor, Clear Edit NZ	Proofread final draft
0.10	10/05/2023	Anandita Pujara	Document Manager, NZTA	Updated as per Technical Standard Committee's feedback
0.11	06/07/2023	Anandita Pujara	Document Manager, NZTA	Updated to clarify contractual roles as per ratification group feedback
0.12	21/12/2023	Anandita Pujara	Document Manager, NZTA	Updated as per further comments from RG

FINAL DRAFT