

**Applicant's Guide**

**ITS and Electrical Field Device  
Product Evaluation Process**

**August 2020**

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## 1 Introduction

### 1.1 General

This document outlines the Department of Transport and Main Roads Intelligent Transport System (ITS) and electrical product evaluation and performance review process. It is the department's primary reference for manufacturers and/or suppliers (applicants from hereon) seeking approval of new ITS and electrical field devices for transport infrastructure.

A number of ITS and electrical field devices are covered by the departmental Technical Specifications. The applicant should review the compliance of their product to the relevant Technical Specifications, where available, before seeking approval of their product in accordance with the guidelines of this document. The Technical Specifications can be found in the link below:

<http://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Specifications/4-Electrical-and-ITS>

For pits and associated pit products: collars, risers and covers / lids, Batch Approval is required. For details of the submission and approval process for Pit and Pit Product Batch Approval, refer to Technical Note TN63 *Assessment of Electrical Pit Products to MRTS91 and MRTS78* and Technical Specification MRTS91 *Conduits and Pits*. Technical Note TN63 can be found in the link below:

<https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Technical-Notes/ITS-electrical-technology>

### 1.2 Definitions

Terms/Acronyms	Meaning
ACMA	Australian Communications and Media Authority
Applicant	A company, manufacturer, supplier, person, Transport and Main Roads Region or Major Projects / Alliance wishing to have a product evaluated.
Approved product	A product that has undergone the product evaluation process and satisfies Transport and Main Roads requirements for its intended use. Approved products will be listed on the approved products list.
EMC	Electro-Magnetic Compatibility
Evaluated products register	A register containing all the ITS and Electrical products evaluated by Transport and Main Roads including those that have not been approved.
ITS	Intelligent Transport System
KPI	Key Performance Indicators
Manufacturer	Product maker, supplier, vendor, company or person representing the manufacturer on whose behalf the product evaluation is to be / has been undertaken.
MTBF	Mean Time Between Failure
MTTR	Mean Time To Repair
NATA	National Association of Testing Authorities
Product	Electrical or ITS field device, technology or equipment and associated processes

<b>Terms/Acronyms</b>	<b>Meaning</b>
PRP	A Product Review Panel constituted by the Director (ITS Technologies) as deemed necessary, for the purposes of reviewing a product
Registered testing authority	An authority registered by National Association of Testing Authorities (NATA) to test in the relevant field, or An organisation outside Australia recognised by NATA through a mutual recognition agreement, or Competent third party recognised by Transport and Main Roads as capable of performing specialised product tests
SOA	Standing Offer Arrangement
STREAMS	Transport and Main Roads ITS platform. It is departmental policy that ITS applications be managed through STREAMS
STREAMS certification	A multilayered process by which STREAMS compliance of a product is verified from basic ability to interface with STREAMS (Level 1) to satisfactory performance within STREAMS over a specified number of years (Level 2). Details of STREAMS certification is outside the scope of this document but is obtainable directly from Transmax
Test	A process whereby product performance is compared against manufacturer claims / specification and/or Transport and Main Roads standards requirements suitability for the intended purpose in the department is examined
Transmax	STREAMS developer and certifier
TSDM	Traffic Surveys and Data Management – a section within Transport and Main Roads
TSNET	Traffic Surveys Network
User Group	A group with a common interest in a product whose members may include all or any of the following: Transport and Main Roads, energy supply authority, federal / state / local government entities and the like

## 2 Purpose

This process has been established to benefit not only the department but manufacturers, suppliers, contractors, designers as well as other road agencies. It is intended to:

- facilitate / accelerate approval of ITS and electrical products that meet Transport and Main Roads requirements
- standardise the approach to procurement of new ITS and electrical products within the department by formally implementing a transparent and consistent process
- clarify manufacturer's roles and responsibilities when seeking departmental approval of their products
- promote effective performance monitoring and continuous performance improvement of approved products
- promote conformance of new devices with equipment already in service with a view to reducing operational complexity and maintenance tasks

- facilitate collaboration/partnering amongst road agencies in optimising product evaluation and further reducing the need, as deemed appropriate, for evaluation of the same product by the different road agencies
- provide tenderers, designers and contractors with ready access to departmental approved product lists and technical requirements.
- provide a recognised single point of entry for manufacturers through which requests for product evaluation (including trials) by the department may be made
- provide the department's regions with a register of all evaluated products, and
- align with the desire by the department to only purchase approved products.

### **3 Scope**

The document outlines the evaluation process from identification of need, selection of a product, interim approval where warranted, trial as required, management of the evaluated products register and the approved products list, once the applicant requests evaluation of their product.

The document is limited to ITS and electrical field devices for transport infrastructure. It is understood that whilst it may not be the case all the time, many such products would require a trial before large scale deployment is undertaken.

The process may be customised by the Director (ITS Technologies) as appropriate for the product type or on how the evaluation is initiated. Request for product approval may emanate from manufacturers, or from within the department, upon recognition or perception of a need.

Major undertakings such as those with a significant research and development component or those that require significant investment in infrastructure or business processes are out of scope and require different evaluation and procurement models.

Trials referred to in this document are limited to field and/or laboratory tests. By nature, these may take substantially less time compared to the expected product life. Longer term product performance is measured over time and trial outcomes may need to be viewed from this context.

The department is not able to undertake this product evaluation process for all ITS and electrical products that it uses. Priority for product types to be evaluated takes into consideration the level of use, costs and safety risk. Where the department has issued approval for products of specific product type (for example, traffic signal controllers), the department will restrict purchases of that product type to the products that have been approved. Prior to submitting a product for evaluation, applicants should confirm that the product is a product type that the department evaluates.

## **4 Product evaluation process**

### **4.1 General**

Applicants, based on their own judgement, evaluation, research and industry knowledge may perceive the department's needs and offer products for evaluation.

Product selection is a structured process that examines the technology, products and suppliers in the market. The intent is to maximise the likelihood of success by minimising pitfalls associated with adoption of new technologies. Product selection is made after market research and/or literature review.

The applicant's product will be examined to identify key advantages, disadvantages, or emerging trends of the technologies. These findings will be compared with departmental requirements. This will include life expectancy of existing technologies or predicted life cycle of new technologies; entry, exit barriers and fitness for purpose.

Product robustness, quality, accuracy, whole of life cost, compatibility, support, experience of other road authorities with the product, warranties and other commercial considerations are further issues that may be considered. A unique set of criteria is developed for each type of product.

Supplier evaluation may involve examining the applicant's business management systems including production processes and facilities, environmental management and quality systems including ethical work practices.

An overview of the product evaluation process, starting from applicant's request for evaluation and the department's need identification, through to post approval is shown in Figure 4.4. The ITS and electrical product evaluation scheme is administered by the Director (ITS Technologies).

Manufacturers who approach the various department's regions for ITS or electrical product evaluation will be redirected to the ITS Technologies Unit.

Applicants should offer evidence that their QA system complies with departmental requirements and will be able to maintain the consistent accepted quality of the approved product.

The department reserves the right to reject a product at any stage before, during and/or after the evaluation process. Where a trial has been conducted, the evaluation findings may be provided to the applicant prior to the decision on product approval. When a product has been rejected, applicants may resubmit an application only when the Director (ITS Technologies) determines that significant improvements have been made to the product to warrant reconsideration. Information on product approval or rejection may be shared within the User Group.

Applicants must not claim that a product has been approved by the department on the basis of acceptance of a product for trial, but must await receipt of a formal product approval certificate.

Suppliers wishing to quote departmental approval of a product must do so by quoting the product approval certificate number, expiry date and note any exceptions/conditions or qualifications included in that certificate.

Suppliers must notify the department of any changes to their product and/or specifications within 14 days of the change. The Director (ITS Technologies) will determine whether there is any need to review the product approval status or conditions.

## **4.2 Application**

To initiate the product evaluation, process the applicant is required to complete an application form, *ITS and Electrical Field Device Product Evaluation Application Form*, and forward it by postal mail or email to:

Director (ITS Technologies)  
Department of Transport and Main Roads  
GPO Box 1412  
Brisbane Queensland 4001

Email: [ITS\\_Electrical\\_Technology@tmr.qld.gov.au](mailto:ITS_Electrical_Technology@tmr.qld.gov.au)

The application must be signed by a Principal or Director of the party making the application.

The applicant, as part of the application process, is required to supply product information to the satisfaction of the Director (ITS Technologies). No further progress will be made until Director (ITS Technologies) determines that sufficient information to allow progress to the next stage has been submitted by the applicant.

Information supporting the submissions is required in hard copy (two copies) or in electronic format on DVD or via email. If submitting via email the subject title should be "RE: Application for TMR evaluation of Product\_Name by Supplier\_Name".

Drawings are required in a format suitable by viewing using the standard office software in .jpg or .tif format or .pdf in addition to .dwg format and documentation is required in English.

Information required includes, but is not limited to, the following:

- name of product
- make, model number, revision, firmware version, software version
- intended use of the product
- product specifications
- installation and operation manuals
- product test data/test reports including NATA laboratory tests where applicable
- test certificates issued by registered testing authorities
- maintenance and repair procedures
- product drawings showing components parts and photographs
- comprehensive component lists
- product training offered
- product approvals obtained from other road authorities in Australia and
- quality assurance system
- list of relevant standards with which the product complies
- financial due diligence, annual financial report provided through Corporate Scorecard / Dunn and Bradstreet or provided by the supplier)
- documented reliable supply chain, such as sourcing and availability of components
- technical expertise and customer focus (for example dedicated account manager), and
- manufacturing capacity for example, how much capacity can be allocated to Transport and Main Roads demand.

All hardware and software necessary for evaluation of the product shall be provided by the applicant and licensed to the department for the duration of the evaluation process.

### **4.3 Identification of need**

Product need arises from the overarching requirement to meet departmental strategic objectives.

The department identifies key strategic priorities:

- improve safety of the road environment
- achieve reliable delivery of the roads program and
- preserve increasing road assets.

The above priorities provide the basis for justification of new ITS and electrical products. This means that products that can increase safety, efficiency, traveller security, traveller information or result in better protection of the environment and assets are potential candidates for priority consideration.

Coupled to the above is the need for continuous product performance improvement and the desire to optimise whole of life costs. Obsolescence and shortcomings of products in service, changes in legislation, new specifications and improved technologies resulting in lower life cycle costs are typical issues that may result in the need for new ITS and electrical products.

### **4.4 Desktop screening**

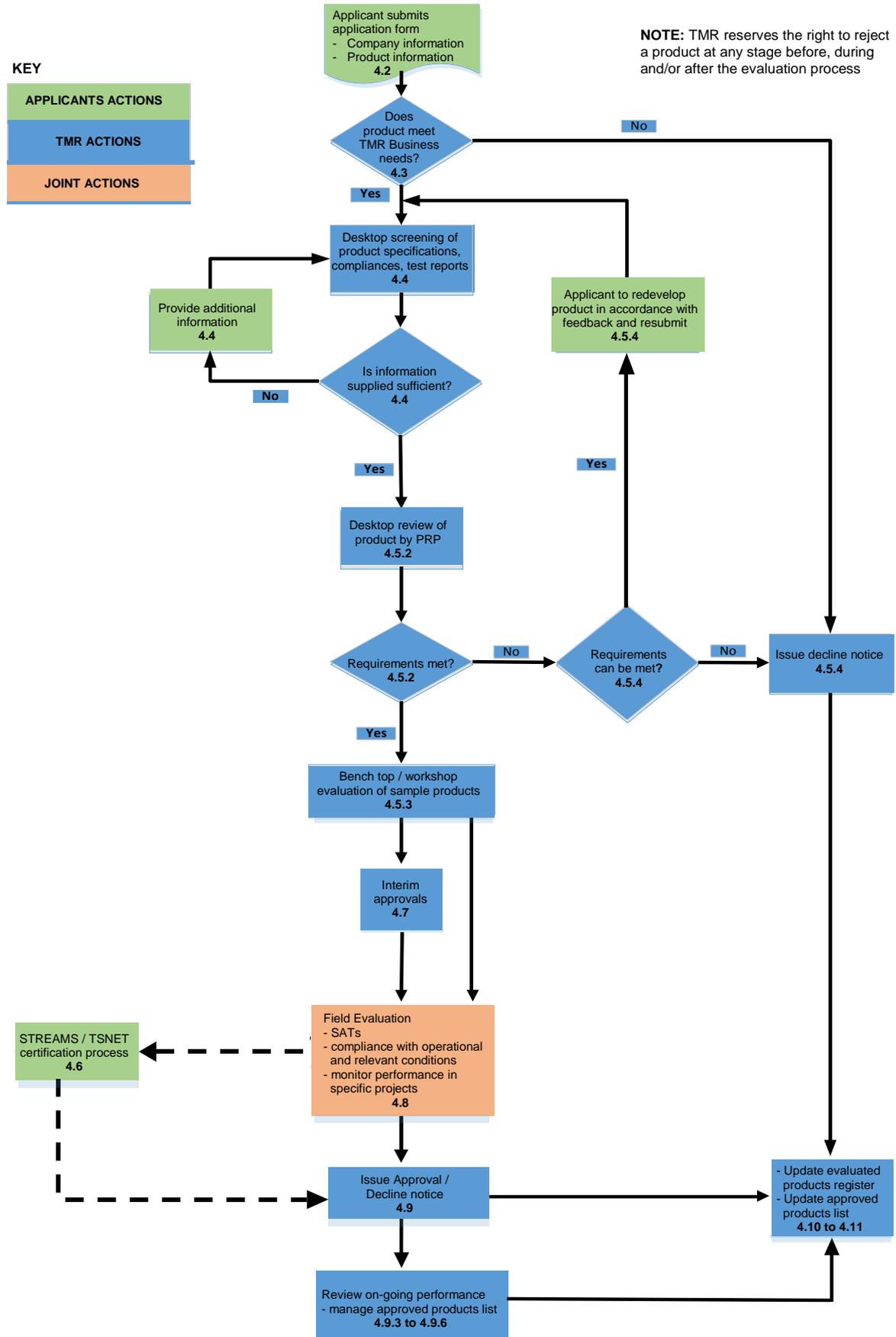
Once the need for a product has been recognised, the minimum product requirements to satisfy the need will be established based on desktop screening. Requirements will vary depending on the product. Minimum requirements will include compliance with standards considered mandatory for the product type. Where minimum requirements are not immediately available, the department may determine these in consultation with prospective suppliers in order to optimise desired outcomes.

Product evaluation will not be progressed if a product fails to meet these minimum requirements. A product may be rejected if deemed uneconomical/unlikely to meet these minimum requirements. A request for more information may be made where there is reasonable chance of the product meeting the minimum requirements. The applicant may be given a time limit to supply such information.

The applicant will be notified of the intention to proceed with preliminary tests when the preliminary requirements have been met. The department shall endeavour to make such notification within six weeks of receipt of complete information from the applicant.

The department's minimum requirements may be revised in cases where products or technologies are unable to satisfy these requirements. Only the products that meet departmental preliminary requirements will be considered further. Products that pass this stage may then be earmarked for trials or tests as deemed appropriate by the Director (ITS Technologies).

Figure 4.4 – Overview of product evaluation process



## **4.5 Preliminary evaluation**

### **4.5.1 Composition and functions of the PRP**

Director (ITS Technologies) may establish a Product Review Panel (PRP) depending on the product to be evaluated. When set up, the PRP may include one or more prospective user(s) of the product.

Activities of the PRP commence once a product has passed the initial screening.

PRP activities may include, but are not limited to, the following:

- desktop review as outlined in section 4.5.2
- deliberate on new product and its alignment with departmental strategies
- recommend product evaluation to progress / not progress to preliminary tests and trial stages
- review trial outcomes
- review supplier's compliance to departmental Quality System requirements
- review supplier's compliance to the department's environmental management system requirements
- recommend approval / rejection of product(s)
- review product performance and SOA arrangements
- recommended delisting of product
- draft information to be distributed to the User Group
- recommend changes to ITS and electrical product evaluation methodology
- submit learnings to incorporate in future evaluations, and
- preserve integrity of the evaluation process.

### **4.5.2 Desktop evaluation of documentation**

Three types of documentation are reviewed and assessed by PRP:

- 1. Documentary evidences of compliance with applicable standards and legislations such as:**
  - documentary evidence of compliance with ISO quality management standards
  - documentary evidence of compliance with statutory requirements for telecommunications product, where applicable
  - documentary evidence of compliance with statutory requirements for radio communications product, where applicable
  - documentary evidence of compliance with statutory EMC regulatory arrangements (C-tick compliance)
  - compliance with the *Electrical Safety Act 2002*
  - compliance with Wiring rules

- compliance with Transport and Main Roads standards or KPI's, where they exist, and
  - compliance with Australian Media and Communications Authority (ACMA) requirements for communication equipment.
- 2. Test reports from standard bodies, governments and/or third parties such as:**
- environment test reports from a NATA registered laboratory or approved laboratory covering the specified environmental tests.
- 3. Documentation regarding the product design, operation, maintenance and quality control obtained from for the supplier such as:**
- outline diagrams and/or photographs of the complete product, showing the type of construction and major external dimensions and features
  - a detailed technical manual covering the complete product, including overview, installation, configuration, testing, commissioning, and operation
  - a full set of circuit diagrams, power supply arrangement and wiring schematics, technical specifications and a service manual including circuit descriptions and information covering fault diagnosis and fixes
  - information or manual of maintenance
  - a description of the operating software and firmware available for the product, including strategy implemented in the hardware and software for safety checks and for prevention of incorrect or dangerous operation. Details of the software and firmware versioning scheme used, and the versions of the software and firmware supplied shall also be covered
  - an overview of the software development process including quality system, control and audits for the software
  - an overview of the software and firmware upgrade support, and the software and firmware development process including quality system, control and audits for the software and firmware
  - manufacturer's specification and data for the communication product incorporated in the system
  - particulars of the manufacturer's quality management system, and evidence of third party certification
  - a quality plan for the product, including details of tests and verification checks to be carried out during and at the end of the manufacturing process
  - a clause-by-clause compliance statement against the applicable product performance requirements
  - environmental withstand capabilities under laboratory test conditions, and
  - compliance with Transport and Main Roads Quality Assurance system requirements.

#### **4.5.3 Review of sample product**

The department may request a preliminary visual inspection at the supplier's or departmental facilities. The supplier is to deliver the product to the venue nominated by the department.

The sample product is subjected to detailed visual inspection and operational checks by the representative(s) of the department. The sample product shall be fully checked and adjusted by the supplier before delivery to the representative and is deemed to be ready for the intended operation when received. The supplier shall code or identify the sample in a permanent manner, and this coding or identification is quoted on all test certificates relating to this item of product. The supplier provides all customised or special test product, devices, fixtures, software or hardware that are required for inspection or testing.

The representative(s) of the department conducts inspections and tests as necessary to ascertain the operation, suitability, safety, reliability and other aspects of the product for its intended use in accordance with applicable requirements.

#### **4.5.4 Compliance with performance requirements**

As the result of the preliminary evaluation, the department may request further information from the supplier to assist the scrutiny process. The department may also request the supplier to address and/or rectify certain issues to enable the product acceptance process to progress further.

Product assessment will be suspended if any non-conformance is found with the performance requirements including:

In cases of minor non-conformance, the supplier may make remedial changes to the product, to the satisfaction of the department and resubmit, following which product assessment will be resumed.

In cases of major non-conformance, the product acceptance process supplier shall be terminated. A new type approval application will be required before the product is returned to the department's premises for type approval. The new application shall provide a detailed report on the causes of the previous non-conformances and the remedial actions taken.

#### **4.6 Integration into the department's telecommunication network**

Where applicable, the applicant should demonstrate that their product can integrate to the department's telecommunications network by providing either of the following certifications.

##### **4.6.1 STREAMS certification process**

STREAMS certification is conducted by Transmax and is required for all products that would be connected to STREAMS. An identical sample of the same product would need to be submitted to Transmax for the purposes of the tests.

##### **4.6.2 TSNET certification process**

TSNET certification is conducted by TSDM and is required for all products that would be connected to TSNET. An identical sample of the same product would need to be submitted to TSDM (Engineering and Technology – Transport and Main Roads) for the purposes of the tests.

#### **4.7 Interim approval**

Interim approval of a product may be granted by the Director (ITS & ET), where the product has passed preliminary tests and risk associated with overcoming outstanding issues is low. A mechanism will be put in place to allow further performance monitoring of the product as part of the interim approval.

Depending on the product, interim approvals may be granted on the basis of product type tests conducted by a registered testing authority. Each deployment of products with interim approval must be registered with the Director (ITS & ET). Interim approval will be limited to a specific project / location and issues for each installation. Assessment period for interim approval is typically one year but where a product is granted interim approval and not immediately deployed, the product shall retain that status until its field trials have been conducted.

#### **4.8 Field evaluation**

##### **4.8.1 General**

A decision to proceed to a field evaluation is subject to a test funding agreement being put in place. Key aspects of a field evaluation include planning, data collection, analysis and passing of a recommendation. Planning requires development of specific test methodologies and acceptance criteria.

During the formal tests, the product supplier may be required to perform any of the following test activities:

- development of verification methods for performance requirements
- risk assessments
- development of safe work procedures as may be required
- project management
- functional safety assessment as appropriate
- selection of test sites as appropriate
- develop installation/design/site selection considerations
- procurement of test product and supplementary work and test equipment
- specification of requirements for connection/operation in STREAMS
- product demonstration/presentation
- installation and testing
- monitoring performance, simulations and conducting further, or a selection of, type tests
- maintenance of test setup
- report and analyse results, or
- provide input in development of specifications.

Outcomes of most of the above activities form a basis for inclusion in the development of the department's specifications.

Pertinent issues are expanded below.

##### **4.8.2 Functional safety**

Products deemed by the department to be performing safety related functions must meet functional safety requirements including SIL levels as defined in AS 61508. Where required, functional safety certification will be conducted by third parties deemed competent by Director (ITS & ET).

#### **4.8.3 Test site**

Where possible, selection of test site(s) will be by mutual agreement between the department and the applicant. Environmental considerations may mean that products are tested in both tropical and other climatic conditions obtainable in Queensland, or elsewhere in the country if jointly tested with other road authorities. The applicant may propose a test site after taking into account their resourcing and other market considerations. The Director (ITS & ET) reserves the right of final decision on test location(s).

#### **4.8.4 Testing and commissioning**

Responsibility for test activities will be test specific. Installation and maintenance is expected to fall under the responsibility of the applicant but will proceed as directed by the department. This offers the prospective supplier opportunity to best demonstrate product performance or advantage in any of the operating conditions expected without due concern to the possibility of incorrect installation by others.

Product sample(s) for test is/are to be provided to the department free of charge.

#### **4.8.5 Maintenance**

Maintenance arrangements will be agreed upon in advance of the test. Unless agreed otherwise, the applicant is expected to maintain the product during field evaluation.

Response time for faults during the test site must not jeopardise the test. Spare units shall be available at the time of first response and a log of all the repairs done during the test must be kept.

The log must capture at as a minimum the following: the nature of the fault, the time the device was out of commission, time to repair, cause of the fault and what corrective action has been taken at the site and/or to product design.

Unless agreed otherwise, equipment damage and/or wear in the test shall be at the applicant's expense. Damage to other property caused as a result of the test shall be at the applicant's expense.

#### **4.8.6 Test period and scheduling**

Test may take up to a year depending on the product. Occasionally the test may require even longer periods in cases where conditions of interest are seasonal or envisaged test conditions have not materialised.

The department reserves the right to schedule tests as priority dictates and may test similar products at the same time / location in order to optimise resourcing and compare product performance.

#### **4.8.7 Interim arrangements**

Interim control / monitoring and communication arrangements may be required at commencement of the test for devices that are intended to eventually connect to STREAMS, TSNET and/or other departmental telecommunications network. This allows Transmax to develop and test the required services that support the devices, including device drivers as necessary, without delaying the field evaluation.

#### **4.8.8 Intellectual property**

Transport and Main Roads reserves the right to retain and publish results and/or learning's from trials. Any intellectual property concerns the applicant may have must be raised at the onset of the product evaluation.

#### **4.8.9 Development of Technical Specifications**

Development of the department's Technical Specifications may be progressed alongside the test when likelihood of successful outcomes is high. Successful conclusion of the test must provide information to allow conclusion of the development of specifications. Responsibility for development of the Technical Specifications lies with the department with the applicant providing input as required.

#### **4.8.10 Funding of test**

Responsibility for installation is expected to fall under the responsibility of the supplier. The applicant may be required to fund the test and/or any tests by third parties, including STREAMS / TSNET certification. Depending on the nature of the product and its immediate application to departmental activities in response to the strategic objectives, the department may be able to contribute some funding for test of new ITS applications or electrical products. This may include STREAMS / TSNET development as required.

#### **4.8.11 Test results**

If the field evaluation is satisfactory, the department shall advise the supplier of the test results. In the event that the product fails or does not provide reliable performance during field evaluation due to a design failure, the test shall be suspended. Here failures are defined as those not induced by misuse, careless handling, operation outside the limits of temperature or supply voltage, or caused by failure of other associated product.

The supplier shall investigate product failures or performance issues on the request of the department, and provide an investigation and corrective action report to the department. The report shall detail the cause(s) for the product failures or performance issues, and the supplier's proposed remedial actions to eliminate these causes.

Notwithstanding any reports or other information that may be provided by the supplier, the department shall determine whether a product failure or performance issue was due to a design fault and whether the design fault is of a minor nature or not. Accordingly, the following results may occur:

- In cases of minor non-conformance, the supplier is to resolve the design problem and make remedial repairs. At the discretion of the department, the field evaluation period may then be either started again from day one or resumed.
- In cases of major non-conformance, the product acceptance process shall be terminated. The supplier may re-submit the product with a new application for product acceptance after the design fault(s) have been resolved.

### **4.9 Approval**

#### **4.9.1 General**

Products are approved/rejected by the Director (ITS Technologies). Full approval may only be granted when a product has undergone a field evaluation successfully and, if connection to STREAMS or TSNET is required, it is certified as compatible with STREAMS (to at least Level 1) or TSNET. ITS and Electrical Technology Unit does not normally purchase products on behalf of the department and makes no guarantee of any sales of an approved product. Products are typically purchased by Contractors in response to departmental projects.

Approval enables standing offer arrangements to be put in place depending on demand envisaged for the product. Use of an approved product in any project is subject to other considerations specific to that project and any limitations/conditions described on the product approval certificate.

A product approval certificate is issued to the applicant and the product added to the department approved products list. Product approval may be qualified depending on the nature of the product. For example, qualification may relate to the STREAMS version with which the product is compatible. In such a case, approval status may need to be reviewed if STREAMS is changed or product firmware has been changed.

The manufacturer is required to notify the department within 14 days of any changes relating to an approved product, including variations to firmware and sources of components.

#### **4.9.2 Third party evaluation / approval**

A product may be approved on the basis of a comprehensive, rigorous trial or other organisation acceptable to the department proven performance conducted under the auspices of a member of the User Group and documented to the satisfaction of the Director (ITS & ET)

#### **4.9.3 Validity**

The product approval certificate will be valid for up to a maximum of three years. The approved status may change depending on the following:

- product performance as determined by the department
- changes to the product, including suppliers of source components
- changes to the manufacturer, ownership or support arrangements
- manufacturer misrepresenting product capabilities on the basis of departmental approvals
- upgrades to departmental systems including STREAMS
- changes to departmental Technical Specifications, or
- changes to statutory or other regulatory requirements.

The department reserves the right to renew / withdraw or qualify approval of a product and update the approved products list accordingly at any time.

#### **4.9.4 Renewal**

The manufacturer is to be notified of expiry of the product approval certificate three calendar months before expiry and invited to submit a new application.

#### **4.9.5 Withdrawal of product approval**

A product's approval may be withdrawn on the following grounds:

- product performance in areas such as accuracy, availability, product life, deterioration, environment does not meet requirements
- deficiencies are noticed that were not apparent during the trial or initial service life; such as in firmware, software, electrical, mechanical operation or otherwise that materially affect product performance
- manufacturer goes bankrupt or can no longer support the product

- manufacturer declares product is obsolete
- product fails to meet new departmental system requirements
- the department has changed its strategic objectives, or
- product no longer meets statutory or other regulatory requirements.

Where withdrawal of a product's approval is intended, the manufacturer is to be notified in writing and given two weeks in which to respond. Failure to respond will result in the withdrawal of the product's approval.

However, an immediate withdrawal of the product's approval will take effect if Transport and Main Roads believe that the defective product presents an immediate performance or health safety risk.

Documented or reported product performance issues emanating from users outside the department may lead to review of the approved product status by the department. Product approval may be withdrawn depending on product performance.

Notices of withdrawal will be issued by either the Director (ITS Technologies) or the Program Director (Road Operations).

#### **4.9.6 Product reinstatement**

A product's approval may be reinstated provided that significant improvements in performance or any shortcoming noticed have been rectified to the satisfaction of the Director (ITS Technologies). The basis for reinstatement includes, but is not limited to, the following:

- after further successful field evaluation
- source of performance deviation has been established and correction results in performance acceptable to the Director (ITS Technologies)
- errors have been rectified and performance is to the satisfaction of the Director (ITS Technologies), or
- arrangements for further product support are put in place in the event of bankruptcy.

#### **4.10 Asset management**

Transport and Main Roads asset management system provides a mechanism for reviewing performance of all departmental ITS and electrical assets. Product performance, changes to products and impacts are recorded and used in approval / withdrawal decision making.

#### **4.11 Evaluated products register**

A register of all the products evaluated will be maintained. The register shall include approved products (including interim approval), those that are currently under review, products that were not approved and those that have been withdrawn.

### **5 Process documentation**

The main documents associated with the product evaluation process are the application form, the product interim approval certificate and the product approval certificate. Transport and Main Roads' Technical Specifications are available on the internet. This document and a list of the approved products shall be made available on the department's internet site and a register of evaluated products maintained.

