# Metrolinx Acceptance Report: Product Description

MX-SEA-PD-131

Revision 00

Date: April 2023

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MX-SEA-PD-131

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**Amendment Record**

| Revision | Date (DD/MM/YYYY) | Description of changes |
|---|---|---|
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# Preface

This is the first edition of the Metrolinx Acceptance Report Product Description (MX-SEA-PD-131). It forms part of a suite of guidance documents that describe the procedures to be followed to comply with Metrolinx's Reliability, Availability, Maintainability and Safety (RAMS) requirements.

The purpose of this document is to describe the report that summarises the results of the system acceptance activities performed for system and/or equipment to be used on a project. Project proponents may need to apply the process when they are undertaking a technical change to the railway system or modifying a maintenance regime or undertaking an operational change to the railway system.

Suggestions for revision or improvements can be sent to the Metrolinx Systems Engineering Assurance office at Engineering.Assurance@metrolinx.com. The Director of the Systems Engineering Assurance office authorizes the changes. Include a description of the proposed change, background of the application and any other useful rationale or justification. Be sure to include your name, company affiliation (if applicable), e-mail address, and phone number.

April 2023

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# Tables

# Documents

Table 1 Supporting Documents

| Document Number | Document Title | Relation |
|---|---|---|
| BS EN 50126-1:2017 | Railway Applications – The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) (PHASE 1: Adoption of European Standard EN 50126-1:2017) | Parent Standard |
| MX-SEA-STD-100 | RAMS Process Standard | Related Standard |
| MX-SEA-GDC-131 | Acceptance Report Guidance | Guidance |
| MX-SEA-TPL-131 | Acceptance Report Template | Template |
| TBD | Hazard Record Product Description | Related Product |
| TBD | Safety Validation Report Product Description | Related Product |
| MX-SEA-PD-125 | RAM Validation Report Product Description | Related Product |
| TBD | System Safety Case Product Description | Related Product |
| TBD | Independent Safety Assessment Report Product Description | Related Product |
| MXSD-SSA-L1-STD-0001 | Railway Risk Assessment Standard | Supporting Standard |
| ISO 9001:2015 | Quality management systems — Requirements | Supporting Standard |
| MX-SEA-TOR-001 | Metrolinx System Review Panel (SRP) Terms of Reference (ToR) | Review Panel ToR |
| April 5, 2023 | Metrolinx Safety Certification Committee (SSC) Terms of Reference (ToR) | Certification Committee ToR |

# Acronyms and Abbreviations

Table 2 Acronyms and Abbreviations

| **Abbreviation** | **Full Name** |
|---|---|
| CTO | Consent To Operate |
| ISA | Independent Safety Assessor |
| RACI | Responsible, Accountable, Consulted and Informed |
| RAM | Reliability, Availability and Maintainability |
| RAMS | Reliability Availability Maintainability and Safety |
| SCC | Safety Certification Committee |
| SRP | System Review Panel |

# Definitions

Table 3 Definitions

| Term | Definition | Source |
|---|---|---|
| Asset owner | Groups and individuals that are responsible for asset ownership, asset maintenance, inventory management, document control, asset handover and reliability engineering | MX-ALM-STD-001 |
| Availability | Ability of an item to be in a state to perform a required function under given conditions at a given instant of time or over a given time interval, assuming that the required external resources are provided. | BS EN 50126:2017 |
| Maintainability | Ability to be retained in, or restored to, a state to perform as required, under given conditions of use and maintenance. | BS EN 50126:2017 |
| Project Company | The private sector entity which enters into the Project Agreement with Infrastructure Ontario and Lands Corporation and Metrolinx to design, build and where applicable, finance, operate or maintain a Project.<br>The special-purpose entity which has entered into a Project Agreement with the Contracting Authority. | CKH-QMA-FRM-003 |
| Project Manager | Appointed by Metrolinx as its representative and is responsible for the delivery of the Project within the prescribed Schedule and budget.<br>Metrolinx employees fulfilling the role of the Project Manager may also be considered the Cost Centre Manager, if this person is also delegated signing authority in accordance with the Metrolinx Corporate Administrative Manual, Administrative Management, Approval Authorization Controls and Designations.<br>It is noted that non-Metrolinx employees fulfilling the role of the Project Manager are not considered Cost Centre Managers. In such cases refer to approved Project Chart of Accounts for the Program for the designated Cost Centre Manager. | CKH-QMA-FRM-003 |

| | | |
|---|---|---|
| Reliability | Ability to perform as required, without failure, for a given time interval, under given conditions. | BS EN 50126:2017 |
| Safety | freedom from unacceptable risk | BS EN 50126:2017 |
| Subsystem | Part of a system, which is itself a system | BS EN 50126:2017 |
| System | Set of interrelated elements considered in a defined context as a whole and separated from their environment | BS EN 50126:2017 |

# 1 Acceptance Report

## 1.1 Purpose

1.1.1 The purpose of the Acceptance Report document is to summarize the results of the system acceptance activities performed for system and/or equipment to be used on a project.

1.1.2 In this document, the term 'system acceptance' is used only for technical aspects of the acceptance procedure. Legal aspects of the system acceptance are not considered here.

1.1.3 The overall objective of the Acceptance Report is to:

a) assess compliance of the total combination of subsystems, components, their interfaces, and Safety Related Application Conditions with the overall Reliability, Availability, Maintainability and Safety (RAMS) requirements; and

b) confirm that the delivered system is fit for entry into service.

1.1.4 This is done through the:

a) evaluation of the RAM and Safety validation reports with respect to the defined acceptance criteria, ensuring that corrective actions are addressed;

b) evaluation of the System Safety Case, including the possible need of an Independent Safety Assessor (ISA) (if applicable); and

c) evaluation of updated Hazard Record.

1.1.5 The results of this assessment shall be recorded in the Acceptance Report.

## 1.2 Applicability

1.2.1 This product is mandatory for any project that undertakes a technical change to the railway system (i.e., introduction of a new subsystem, renewal of an existing subsystem, a modification to an existing subsystem, or introduction of a new or modified maintenance regime) or undertakes an operational change to the railway system.

1.1.1 This product is not applicable for established routine maintenance activities including like-for-like replacement of components.

1.1.2 This product is considered good practice when developing or modifying any complex system.

## 1.3 Supporting Material

1.3.1 The Acceptance Report template is located in MX-SEA-TPL-131.

1.3.2 Guidance on completing the Acceptance Report is located in MX-SEA-GDC-131.

# 1.4 Products

1.4.1 The Acceptance Report is a product of the System Assurance process. Guidance on this process is available via MX-SEA-STD-100.

# 1.5 Key Responsibilities

1.5.1 The Project Company is responsible for the production of the Acceptance Report. Preparation of the Acceptance Report may be delegated, however the Project Company is responsible for its content and quality.

1.5.2 The Project Company is the organization responsible for the contracted scope of work at the time of development.

1.5.3 The System Review Panel (SRP) has delegated authority from the Safety Certification Committee (SCC) and is responsible for endorsing the Acceptance Report. The System Review Panel ensures that the Acceptance Report is compliant with the project requirements, applicable legislation, and national, industry, and Metrolinx standards. The SRP may also identify uncertainties, issues, and assumptions that may arise as the project progresses that should be addressed.

1.5.4 The Project Management may be performed by Metrolinx or may be contracted, for example in a Design/Build contract, whereby Metrolinx Project Management would ensure contract provisions for the Acceptance Report are met and would not develop the Acceptance Report.

1.5.5 Some of the Asset Owner obligations and responsibilities may be transferred through contracting, whereby the contract contains RAMS and operating requirements. The Metrolinx Asset Owner would endorse the Acceptance Report whereas a contracted party responsible for RAMS would develop the Acceptance Report as directed by the Project Management.

1.5.6 The full Responsible, Accountable, Consulted, and Informed (RACI) information that sets out the interaction between all stakeholders involved in the production and endorsement of the Acceptance Report is available in MX-SEA-STD-100.

# 1.6 Competence

1.6.1 The Acceptance Report shall be completed by personnel with technical knowledge of the system and knowledge of the activities of the project.

# 1.7 Structure

1.7.1 The structure of the Acceptance Report is described in the Acceptance Report Guidance document located in MX-SEA-GDC-131.

1.7.2 The document requires the following section titles:

a) Introduction;

b) System Description;

c) Planned Acceptance Activities;

d) Acceptance Team;

e) Acceptance Evidence;

f) Caveats and Limitations;

g) Outstanding Actions for Non-Compliance; and

h) Conclusions.

# 1.8 Contents

1.8.1 The contents of the Acceptance Report are described in the Acceptance Report Guidance document located in MX-SEA-GDC-13.

1.8.2 As a minimum, it shall contain the following:

a) an overview of the system for which the acceptance activities have been performed, including the specific configuration of equipment to which the Acceptance Report applies;

b) the defined acceptance criteria;

c) all activities planned and performed for acceptance purposes;

d) identification of the team and individuals responsible for acceptance activities;

e) the evidence that has been provided to substantiate acceptability claims, including any outstanding actions and application conditions;

f) any caveats and limitations that become evident while performing the assessment activities; and

g) a final statement about the system's fitness for entry into service.

# 1.9 Quality Criteria

1.9.1 The Acceptance Report shall have sufficient detail to summarize the results of the system acceptance activities and confirm that the delivered system is fit for service or has outstanding actions. It shall provide a clear final statement on system fitness for all actors responsible for the Consent To Operate (CTO) gate to consider.

1.9.2 The quality management system used shall conform to ISO 9001:2015 rules or equivalent rules accepted by the Metrolinx Project Delivery Team and be appropriate for the system under consideration.

# 1.10 Document Management

1.10.1 The Acceptance Report shall be produced at Phase 10 (Acceptance) and is a requirement for the CTO gate.

1.10.2 Table 4 provides an overview of the Acceptance Report document phases.

| Document | Phase |
|---|---|
| Acceptance Report | 10 – Acceptance |

TABLE 4: DOCUMENT PHASES