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RISSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD
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Australian Railway Operations

Accredited Australian Standards Development Organisation

AS 7450 Rail Systems Interoperability

STANDARD

This Australian Railway Standard *AS7450: Rail Systems Interoperability Standard* was prepared by the RISSB *Interoperability development group*. It was signed off by the RISSB *Interoperability development group* and *Operations and Performance Standing Committee* in *May, 2013* and subsequently by the Development Advisory Board (DAB) in *May, 2013*. The DAB confirmed that the process used to develop the Standard was in accordance with the RISSB accredited development process. On the *5, June, 2013* the RISSB Board approved the Standard for release. This Standard was published on the RISSB website (www.rissb.com.au) on the *28, June, 2013*.

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The following organisations were represented on the Interoperability development group:

RailCorp	Queensland Rail	Bombardier
ARTC	Aurizon	UGL Rail
Public Transport Authority WA	Public Transport Victoria	Pacific National
Thales	Opus Rail	WorleyParsons

This Standard was issued on two occasions for open review and was independently validated before being signed off and the approvals were granted.

RISSB wish to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the committees and through the open review periods.

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1 Preface

Interoperability is considered a vital part of rail systems in many parts of the world. In Australia, particularly, many states and jurisdictions, in effect, need to operate effectively together.

A goal of the Australian Rail Industry is for trains to move safely, efficiently, and effectively from one network to another. One tool in achieving this is interoperability: networks, assets, systems, and processes are mutually interdependent.

The aim of this Standard is to outline requirements that encourage rail organisations to work collaboratively towards interoperability providing benefits for the whole of the rail industry.

Its intent is to enhance the understanding of interoperability as well as to provide a methodology for considering interoperability when introducing new technology or implementing a change management process.

Interoperability has the potential to provide many benefits to the Australian rail industry in terms of safety, harmonisation, cost effectiveness and future proofing. The approach in this Standard is to encourage the consideration of improving interoperability at all opportunities where a change is proposed. The structure of this document is:

Sections 1 to 5 provide a background on the Standard and Interoperability principles to be applied.

Section 6 provides a guide to interoperability considerations.

Section 7 gives a description of the levels of interoperability to be considered.

Section 8 provides a roadmap to implementation of interoperability.

Section 9 describes what should be contained in the Interoperability Assessment Report.

In order to demonstrate compliance with this Standard the user is obliged to:

1. address all mandatory items in Sections 4 to 7;
2. follow the roadmap detailed in Section 8 and;
3. if required, produce a report on interoperability considerations and outcomes as detailed in Section 9.

For the purposes of this standard all clauses containing the term “shall” are considered mandatory requirements, all clauses containing the term “should” are considered recommendations, and all other clauses are explanatory statements.

This document is the primary standard on railway interoperability. It is supported by the following subordinate documents:

- AS7666 Train Protection and Control Interoperability, and
- A Guideline on Interoperability Opportunities.

2 Scope and Implementation

This Standard provides the Australian rail industry with a process for addressing the interoperability of current and future systems, assets or processes. The standard is to be followed when organisations are considering or implementing any new or changed systems, assets or processes.

This Standard is designed to promote the consideration of interoperability. It does not prescribe specific solutions.

“Interoperability” is not equivalent to “sameness”; therefore this Standard does not address specific design standards for system architectures. It does, however, recommend certain principles for the interoperability and compatibility of systems.

In addition, “interoperability” is not the same as “interchangeability”; therefore this Standard does not address interchangeability (the quality of allowing individual components or modules to be swapped between different systems).

Standardisation is one means of achieving interoperability. As a consequence all stakeholders should agree to work within specified Standards in order to assist with providing a path to interoperability.

The principles of interoperability should be applied across the entire spectrum of rail system processes. Consideration should also be given to the human factors in the railway system and the development of interoperable processes for the operation of the railway. Interoperability should be considered for the full range and variability of rail operating conditions inclusive of infrastructure, track workers and rail vehicles.

Interoperability can be achieved through various means including:

- the use of similar hardware or software;
- the use of common communications, languages, data or systems; and
- through common and effective interfaces, processes or procedures.

This standard does not negate the requirements of other relevant Australian standards.