



Rail systems interoperability

RiSSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Operations Standard



This Australian Standard® AS 7450 Rail systems interoperability was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organizations:

Queensland Rail	Arcadis	ARTC
Doc Frank Rail Services	TfNSW	Shoal Group
Yarra Trams	RBTU	Calibre Group
UGL	Hitachi Rail	PTA WA
SMEC	PTV	Aurizon
JMDR Railtech		

The Standard was approved by the Development Group and the Operations Standing Committee in September 2021. On November 29, 2021 the RISSB Board approved the Standard for release.

This standard was issued for public consultation and was independently validated before being approved.

Development of the Standard was undertaken in accordance with RISSB's accredited process. As part of the approval process, the Standing Committee verified that proper process was followed in developing the Standard.

RISSB wishes to acknowledge the positive contribution of subject matter experts in the development of this Standard. Their efforts ranged from membership of the Development Group through to individuals providing comment on a draft of the Standard during the open review.

I commend this Standard to the Australasian rail industry as it represents industry good practice and has been developed through a rigorous process.



Deb Spring
Chief Executive Officer
Rail Industry Safety and Standards Board

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This Standard was prepared by the Rail Industry Safety and Standards Board (RISSB) Development Group AS 7450 Rail systems interoperability. Membership of this Development Group consisted of representatives from the organizations listed on the inside cover of this document

This Standard supersedes AS 7450:2013 Rail Systems Interoperability

Objective

Interoperability has the potential to provide many benefits to the Australian rail industry in terms of safety, harmonization, cost effectiveness and future proofing. The objective of this Standard is to provide interoperability principles that guide rail transport operators (RTO), including rolling stock operators (RSO) and rail infrastructure managers (RIM), and their third-party organizations towards improving interoperability within the Australian railway industry.

The intent of this Standard 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. Further, this Standard requires the consideration of improving interoperability at all opportunities where a change is proposed.

This Standard applies to all organizations who are involved in the design, supply and operation of new infrastructure, systems and rolling stock for the Australian railway industry.

Rail transport operators should implement where appropriate interoperability throughout the asset life cycle and implement this Standard where appropriate.

Compliance

There are four types of provisions contained within Australian Standards developed by RISSB:

1. Requirements.
2. Recommendations.
3. Permissions.
4. Constraints.

Requirements – it is mandatory to follow all requirements to claim full compliance with the Standard. Requirements are identified within the text by the term 'shall'.

Recommendations – do not mention or exclude other possibilities but do offer the one that is preferred. Recommendations are identified within the text by the term 'should'.

Recommendations recognize that there could be limitations to the universal application of the control, i.e., the identified control is not able to be applied or other controls are more appropriate or better.

Permissions – conveys consent by providing an allowable option. Permissions are identified within the text by the term 'may'.

Constraints - provided by an external source such as legislation. Constraints are identified within the text by the term 'must'.

For compliance purposes, where a recommended control is not applied as written in the standard it could be incumbent on the adopter of the standard to demonstrate their actual method of controlling the risk as part of their WHS or Rail Safety National Law obligations. Similarly, it could also be incumbent on an adopter of the standard to demonstrate their method of controlling the risk to contracting entities, or interfacing organizations where the risk may be shared.

RISSB standards address known railway hazards within the rail industry. These hazards and the clauses which address them are listed in Appendix A.

This Standard includes a commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by 'C' preceding the clause number and is printed in italics in a box. The commentary is for information and guidance, it does not form part of the requirements and recommendations of this Standard.

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1 Scope and general

1.1 Scope

This Standard aims to improve the level of interoperability across the Australian Railway industry. This can be achieved by rail transport operators (RTO) working towards a level of interoperability commensurate with the financial and operational benefits as a result of interoperability.

This Standard provides a set of interoperability principles that the Australian Railway can use to achieve interoperability.

This Standard recognizes that in some circumstances it may be determined that interoperability cannot be practically achieved. To assist in this determination, this Standard provides a process for reviewing the interoperability of current and future systems, assets, or processes.

Interoperability is not equivalent to sameness. However this Standard provides recommendations for certain principles regarding the interoperability and compatibility of systems.

1.2 Exclusions

This Standard does not:

- (a) address specific design standards for system architectures;
- (b) address interchangeability (the quality of allowing individual components or modules to be swapped between different systems);
- (c) prescribe solutions for interoperability;
- (d) cover safeworking rules and procedures; or
- (e) apply to tourist or heritage rail systems.

1.3 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document:

- AS 4777 Railway Operations - Management of Change
- ISO/IEC/IEEE 15288 Systems and software engineering - System life cycle processes

NOTE: Documents for informative purposes are listed in the Bibliography (Appendix D).