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AUSTRALIAN RAIL INDUSTRY STANDARDS ORGANISATION

AS 7660

Radio Communication in the Rail Corridor

STANDARDS

Australian **STANDARD**

Advancing safety and productivity

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This ARISO product has been developed using input from rail experts from across the rail industry and represents good practice for the industry. The reliance upon or manner of use of this ARISO product is the sole responsibility of the user who is to assess whether it meets their organisation's operational environment and risk profile.

Development of this Standard was prepared by an Australian Rail Industry Standards Organisation (ARISO) Development Group consisting of representatives from the following organisations:

ARTC, Fortescue, Pacific National, Queensland Rail, SYSTRA, Transport for NSW, Department of Transport and Planning, and VicTrack.

The Infrastructure Standing Committee verified that ARISO's accredited process was followed in developing the product, before the ARISO Board approved the document for publication.

ARISO 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 comments 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.

Alan Fedda
Chief Executive Officer
Australian Rail Industry Standards Organisation

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Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
2025	19 February 2026	This document has been reviewed to ensure it remains relevant and applicable. The latest review assessed the content, confirming that while updates were made to align with current industry practices, technologies, and regulatory requirements, the original authorship and copyright have been acknowledged as required.

Approval

Name	Date
Australian Rail Industry Standards Organisation Board	19 February 2026

Copyright

Preface

This standard was prepared by the Radio Communication in the Rail Corridor Development Group, overseen by the ARISO Infrastructure Standing Committee.

This revision adds detail and clarity to the previous version. It explains system functionality, lifecycle management and safety in more depth, and introduces stronger rules for emergency communications, technology upgrades and network interoperability. Definitions are clearer, alignment with related standards is improved, and compliance, hazard management and equipment checks are strengthened. Overall, the standard is now more detailed, prescriptive and consistent with current regulatory and operational needs.

Objective

The objective of this Standard is to define functional requirements for radio communication systems that will:

(a)   mitigate the risk associated with identified hazards;

(b)   facilitate compliance with the Rail Safety National Law; and

(c)   identify the roles of Rail Infrastructure Managers (RIM) and Rolling Stock Operators (RSO) in providing, operating, maintaining and removing radio communication systems.

Rail Transport Operators (RTO) are legally required to ensure safe railway operations. While each operator meets this obligation through their own safety management system, safety critical communications are to be coordinated and consistent across operators. Despite differences in technology, communication systems are to enable seamless and reliable communication for users across all RIM boundaries and interfaces.

Compliance

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

(a)   Requirements.

(b)   Recommendations.

(c)   Permissions.

(d)   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.

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 organisations where the risk may be shared.

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'.

ARISO Standards address known hazards within the railway industry. Hazards, and clauses within this Standard that address those hazards, are listed in Appendix A.

Appendices in ARISO Standards may be designated either "normative" or "informative". A "normative" appendix is an integral part of a Standard and compliance with it is a requirement, whereas an "informative" appendix is only for information and guidance.

Commentary

> Commentary *C Preface*
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> 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 and does not form part of the Standard.

Table of Contents

Section 1   Scope and general

1.1   Scope

This document defines baseline requirements for safety-critical radio communication in the rail corridor, applying to network controllers, train crews, people whose work is in or associated with the rail corridor, and covers direct radio communications with rail traffic and railway stations. It applies to new and modified, freight, passenger, light rail, and infrastructure maintenance rolling stock radio communication systems and related infrastructure but is not retrospective in application.

System-level performance expectations are addressed in this document; Equipment specific details are covered in AS 7495 and AS 7511

The document applies to both analogue and digital radio systems, including voice and data, supporting transition to digital technologies for improved safety, reliability, and interoperability. Requirements reflect the functional capabilities of each system type, ensuring expectations are proportionate and technically feasible for both analogue and digital implementations. If a system does not support particular functions, effective risk mitigation is expected to maintain safety, reliability, and interoperability objectives, so far as is reasonably practicable (SFAIRP).

This document does not specifically cover communication systems used on cane railways, heritage rolling stock operating on isolated networks, and road-rail vehicles, but relevant aspects of this document can be adopted by the responsible RTO as appropriate.

This Document does not address the design or performance requirements of communication systems used specifically for train control, including signalling, automatic train protection or autonomous train operation systems which are covered by separate standards.

1.2   Normative references

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

- AS 7470:2024, *Human Factors Integration and Technical Requirements for Rail Engineering Projects*
- AS 7495:2024, *Rolling Stock Communication Equipment*
- AS 7502:2025, *Road Rail Vehicles*
- AS 7527:2019, *Rolling Stock Event Recorders*
- AS 7530:2018, *Electrical Systems*
- AS 7533:2021, *Driving Cabs*
- AS 7722:2025, *EMC Management*
- AS 7770:2018, *Rail Cybersecurity*
- *Radiocommunications Act 1992*
- *Rail Safety National Law*

> NOTE:
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> Documents for informative purposes are listed in a Bibliography at the back of the Standard.