

RISSB Product Proposal (and Prioritisation)

(The information you provide in this form will be used to help stakeholders determine where this project sits within the railway's priorities.)

The more thorough your submission, the better the decision-making process in prioritising new ideas.

Light blue italicised text is for guidance and can be deleted as the form is completed. Feel free to write more words, text boxes will expand as necessary.)

Primary information	
Type of product being suggested:	<i>Guideline</i>
Title of product being suggested:	<i>Technical Guideline for Interoperability – Rolling Stock</i>
Date of suggestion:	<i>31-Jan-18</i>
Reason for suggestion:	<i>To provide guidance for manufacturers and rolling stock operators on the considerations required for rolling stock to operating across multiple rail infrastructure managers (RIMs)</i>
Railway discipline area:	<i>Rolling Stock</i>
Scope:	
<p><i>This documents covers the technical information that needs to be considered for rolling stock operating on multiple rail networks, in particular those that are adjoined to the defined interstate rail network (DIRN). It outlines high level system performance and functions that rolling stock systems is expected to comply with; limits and differences between RIMs (with rationale explaining the difference) and describes the infrastructure and human interfaces with the rolling stock.</i></p> <p><i>This document does not provide any mandatory requirements as such requirements are determined by the RIM and varies from one to another due to differences in the rail operational context.</i></p> <p><i>As a minimum it is expected that the guideline will cover:</i></p> <ol style="list-style-type: none"> <i>1. The networks and RIM responsible</i> <i>2. The performance and function required to operate across these different networks from a rolling stock system perspective. For example</i> <ol style="list-style-type: none"> <i>a. Braking system: Meeting the minimum safe braking distance, failsafe/redundancy</i> <i>b. Traction: Motive power to ascending steepest grades in all weather adhesion conditions</i> <i>c. Wheelsets and bogies: Gauge, Wheel profiles, maintenance tolerances and rotational stiffness</i> <i>d. Static and kinematic performance</i> <i>3. Description of Rolling stock interfaces and interoperability implications</i> <ol style="list-style-type: none"> <i>a. Track (wheel rail and transit space)</i> <i>b. Civil (Bridges and structures)</i> <i>c. Electrical (OHW/OLE/Third rail)</i> <i>d. Signalling and Communications</i> <i>e. Stations</i> <i>f. Crew</i> <i>g. Maintenance personnel</i> 	

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- h. Operators
4. A guide on using a systems and collaborative approach to achieve safety SFAIRP for interoperability
 5. Appendices on existing operating interoperable rolling stock (freight and passenger) and its specifications to be used as technical baseline

Objective:

The document serves as the first step change towards rolling stock interoperability on the DIRN/standard gauge networks through (1) identifying common high level functional/performance requirements (2) providing a summary of existing systems, their differences and rationale (3) setting up a technical baseline for a future TSI (Technical Specification for Interoperability)

Hazard identification: *(what safety hazards would the proposed document seek to address)*

1	<i>2.0 Accreditation</i>	6	<i>7.0 Human Factors</i>
2	<i>3.0 Security</i>	7	<i>8.0 Operations</i>
3	<i>4.0 Environment</i>	8	<i>9.0 Signals infrastructure</i>
4	<i>5.0 Rolling Stock</i>	9	<i>10.0 Degraded working</i>
5	<i>6.0 Infrastructure</i>	10	

Benefits: *(enter wherever applicable in below categories)*

Safety

The guideline and rationale for different requirements across different RIMs provides better context for operators or manufacturers to understand to core of the problem, which they could apply the collaborative approach described in the document to achieve safety SFAIRP.

Interoperabilityⁱ / harmonisationⁱⁱ

By outlining the high level system performance and functions that rolling stock systems is expected to comply with, this document contains a basis for manufacturers/ operators to design/run rolling stock across multiple networks. And through exploring the reasons for different requirements in different networks, it will promote different RIM to debate on these issues and harmonise

Interoperability provides scope for more efficient use of existing rail networks during specific circumstances (e.g. additional track usage during special events) to meet system demands. The TGI will provide a standardised basis to instigate more effective collaboration.

It is expected that the TBI will eventually turn into a TSI, similar to a European model.

Financial

By better understanding the requirements for interoperability for different RIMs, the time and effort required to seek approval to comply with each RIM's technical requirements for access is decreased, thus saving resources

Having a common guideline to follow will also enhance healthy relationships between competitors, thus trigger more innovation

Environmental

N/A

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Impacts:

The quality of the document will be constrained by the level of input from RIMs and their willingness to compromise on their existing standards, which is legacy based. The author will also need to very knowledgeable of different networks and have worked in a RIM for an extensive period of time.

i **Interoperability** is the ability of a process, system or a product to work with other process, systems or products (aka compatible systems through managed interfaces).

ii **Harmonisation** - the act of bringing into agreement so as to work effectively together (aka uniformity of systems).

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Other items to aid RISSB project planning

(This information will help RISSB plan the project should it be successful at prioritisation.)

Structure:		
<i>See scope</i>		
Reference / source materials: <i>(This is very important; it will directly impact the tone/style/flavour of the product. It will also have a big impact on the research we will ask our Author to undertake and therefore impact timescales/cost. Do this section carefully because addition of new material later could impact on those. It may also be important here to stipulate reference / source materials that the SC would like to avoid.)</i>		
#	Reference / source material	Available from
1	<i>Code of Practice for the Defined Interstate Rail Network Volume 1</i>	<i>https://www.artc.com.au/uploads/cop_vol1.pdf</i>
2	<i>TECHNICAL SPECIFICATION FOR INTEROPERABILITY</i>	<i>European Rail Agency website</i>
3		
4		
5		
6		
7		
8		
9		
10		
Assumptions:		
<i>DG and authors have a good understanding of their networks and the DIRN</i>		
Constraints:		
<i>Refer to impacts</i>		
Australian Standards considerations: (only applies if proposed product is to be a Standard)		
Does proposed Standard duplicate an existing Australian Standard <i>(Where such duplication occurs, justification or explanation shall be included in the standard)</i>	<i>yes (potentially with Code of Practice for the Defined Interstate Rail Network Volume 1)</i>	
(if yes – please list)		
Will proposed Standard be developed for conformance assessment purposes? <i>(relates only to inspection and testing activities subject external certification)</i>	<i>no</i>	
(if yes – please detail expected certification activities)		
Are there any International Standards on the same subject	<i>Yes(TSI)</i>	
(if yes – could Int.std.be adopted or used as a basis for this development)	<i>No as the European TEN-T network is different to the DIRN network</i>	
(if no – please provide reasons)		
Expected effort required at key stages:		
Activity <i>(There are other activities in a RISSB project which are well understood and easier to control. This section relates to some of the more variable activities.)</i>	# Days <i>(Baseline estimates for consideration)</i>	

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The Author's research into the reference / source materials.	<i>8 weeks</i>
The Author's further (if required) development of draft headings for the document (including any work that may be required on the scope, purpose and hazard references).	<i>2 weeks</i>
The Author's production of the draft content building on the above.	<i>4 weeks</i>
The Author's production of a further draft based on Development Group comments on the above.	<i>12 weeks</i>
The Author's development of the 'post public consultation' draft based on the guidance of the Development Group in addressing public comments. <i>(Try to imagine the subject of the product, how complex/political it is and therefore what the reaction might be at public consultation.)</i>	<i>4 weeks</i>
Independent validation ⁱⁱⁱ (applies only to standards).	<i>N/A</i>
The Author's finalisation of the product incorporating Development Group's validation comments.	<i>2 weeks</i>

ⁱⁱⁱ Independent validation is to:

1. Check that clauses relate to the identified hazards
2. Check that the standard is of comparable quality to other similar domestic / international standards
3. Check that the standard is fit for the Australian railway (and is therefore nationally applicable)
4. Provide a recommendation for any deficiencies from the above