Lead standards committee:	Rolling Stock	Date:	
Support standards committee:	Energy	Date:	
Support standards committee:	Control Command & Signalling	Date:	
Subject:	Five-year review of RIS-2795-RST Track to Train RFID Compatibility, Issue 2.3		
Sponsor:	Mark Oakley – Professional Head of Rolling Stock		
Author:	Darren Fitzgerald – Principal Electrical & Systems RST Engineer		

1. Purpose of the paper

1.1 This paper sets out the outcome of the five-year review of RIS-2795-RST Track to Train RFID Compatibility, issue 2.3. Standards committee(s) approval and support is sought for the recommendation and way forward.

2. Background

2.1 RIS-2795-RST was created following Network Rail proposal 13/006 which sought the development of a standard for the data structure and communications protocol for radio frequency identification (RFID) technology to support automatic selective door operation (ASDO). RIS-2795-RST is designed to be extensible to other applications, with the aim being to specify a national system for RFID usage when applying this technology.

2.2 The purpose of RIS-2795-RST is to mitigate the proliferation of protocols and prevent any incompatibilities between different RFID location-specific applications that could be used on a route. The tag data message format structures and communications protocol set out in RIS-2795-RST is in use on several routes.

2.3 Since the publication of RIS-2795-RST issue two there have been three limited change releases to improve clarity, insert new and update existing application codes.

2.4 RIS-2795-RST is used by stakeholders to support ASDO, automatic power changeover (APCO) and automatic power mode control (APMC) functions on vehicles.

3. Impacts on the standard(s) following publication/entering into force

3.1 Consideration has been given to the following during the review:

a   Business case for change – RIS-2795-RST mitigates the proliferation of protocols and prevent the likelihood of any incompatibilities between different RFID location-specific applications that could be used on a route. The objectives of the business case for change were realised in publishing the standard.

b   Deviations – there is no formal process for deviating against a RIS; however, no opinions have been sought from the RST SC regarding the application of RIS-2795-RST issue 2.3.

c   Current projects or proposals being processed – A three-year review of RIS-0796-CCS resulted in the establishment of a project to update the standard, which is the counterpart standard from the CCS perspective to RIS-2795-RST, and also requires updating to reference ETSI 302 208 v3.3.1, as discussed in 3.1h.

d   Amendments and clarifications – There have been no amendments or clarifications issued against RIS-2795-RST issue 2.3.

e   Enquiries – Four enquiries have been received in total for RIS-2795-RST since issue two.

An enquiry was received for RIS-2795-RST issue two from an operator requested clarity on the application codes for ASDO as it was not understood whether there is one application code per train or per vehicle ASDO system. No change was made to RIS-2795-RST following receipt of this enquiry.

A request for help was received for RIS-2795-RST issue two was received from an operator requesting a new RFID application code for use with their trains ASDO system since they could not use existing application codes for operational reasons. The change was accepted and resulted in the publication RIS-2795-RST issue 2.1 with additional ASDO functionality included.

A request for help was received for RIS-2795-RST issue 2.1 to allocate additional 'Demands Action' function codes for application code 14 APCO. The change was accepted and resulted in the publication RIS-2795-RST issue 2.2 with APCO included.

A request for help was received for RIS-2795-RST issue 2.1 to allocate a new application code for APMC. The change was accepted and resulted in the publication RIS-2795-RST issue 2.3 with APMC included.

f   Research projects – There have been no research projects relating to RFID applications that could influence the content of this standard.

g   Regulations – There have been no changes to regulations directly affecting RFID applications in rail since the publication of RIS-2795-RST.

h   National technical specification notices (NTSNs) and European standards – There have been no changes to NTSNs directly affecting RFID applications in rail since the publication of RIS-2795-RST.

The UK Interface Requirements 2030 "Licence Exempt Short Range Devices" references ETSI 302 208. In RIS-2795-RST issue 2.2, v3.1.0 of ETSI 302 208 is referenced but this has been superseded by v3.3.1 since the publication of RIS-2795-RST; however, the latest version does not impact the content of RIS-2795-RST. This review has found that that requirement 2.1.1 in RIS-2795-RST for RFID protocol radio frequency range contains an erroneous value of 867.9 MHz however, which should be 867.6 MHz in accordance with the IR 2030 UK Interface Requirements, requirement IR2030/13/3, which in turn references the interrogator frequencies of operation in the lower band within ETSI 302 208. An amendment to the standard will be necessary to correct this value.

BS ISO/IEC 18000-63:2015 has been superseded by BS ISO/IEC 18000-63:2021. BS ISO IEC 18000-63:2015 is referred to for an open point, whereby RIS-2795-RST sets out that "requirements to mitigate potential interference between the RFID system set out in this document and ISO/IEC 18000-63 RFID readers and tags is an open point", therefore the reference is an update to the bibliography rather than a change to any content.

i   Changes in technology – There have been no changes to technology directly affecting RFID applications in rail since the issue of RIS-2795-RST.

j   Are there any barriers to adoption? – No barriers have been identified.

k   Any other observations –With other systems being capable of also delivering the same functionality as RFID tags, industry has identified a need for a strategic approach to train control from wayside communications. The need for a proposal to develop a strategy was discussed at a CCS SC meeting, minute number CCS/27072023/7.4.2.12, but the responsibility of developing the strategy falls within the remit of V/T C&C SIC and is outside of the scope of this standard review.

4.   Discussion

4.1   Review outcome

4.1.1   The review outcome is that the technical content of RIS-2795-RST remains fit for purpose but it is not aligned with other standards to provide a holistic approach to RFID data sharing between track and train considering all available methods of transmission, such as ETCS balises and RFID tags from a variety of suppliers.

4.1.2   An amendment is necessary in the short-term to correct the erroneous value contained in requirement 2.1.1 of RIS-2795-RST with reference to ETSI 302 208 and to update the bibliography to reference BS ISO/IEC 18000-63:2021.

5.   Recommendations

5.1   The standard committee(s) are asked to:

    a   DISCUSS the outcome of the five year review and the proposed recommendation:

        i.   Action required:

            1.   Publish an amendment to correct the erroneous value in RIS-2795-RST issue 2.3 requirement 2.1.1 and update the bibliography.

            2.   Carry out consultation with industry – identify additional stakeholders to consult

RSSB completion: [do not delete]

Standards committee	Meeting date	Decision	Minute numbers		Next review date approved by the lead standards committee
			Pre-consultation review	Post-consultation review	
Rolling Stock		Approved			
Plant		Supported			

[add rows as necessary]

Appendix A   Disposition table for standard(s) recommended for withdrawal

A.1   Standard number, title, issue [one table per standard]

Clause number	Clause title	Way forward	Comments
		Withdraw	Why the clause is no longer needed

Appendix B   Associated information to support the review

The information in this appendix is provided by the industry groups information manager to assist with the review. This appendix should be deleted prior to submitting the review form to the SCs.

Deviations	Nil
Request for Help	23-REQ-023 – Alex Cochrane TfL) received 30/03/2023 **Outcome of resolved Requests for Help:** Amendment
Proposals	Nil
RSSB Standards Programme	Nil
Amendments or clarifications	Nil
Point releases	Nil
Technical notes	Nil
Enquiries	No enquiries listed for issue 2.2
Business case for change / Impact assessment	23 IA17
CIRAS	TBC
Information from RMDB Note: update RMDB to reflect action/decision	The 'Considerations for revisions' file is missing, please confirm with the TS/PM. If nothing, this can be marked Nil.
Other intelligence and relevant information	Any sources of supporting information, if anecdotal this should be clear, or referenced appropriately if not

Related documents:

Process procedure for the 12 month and five-year review of Railway Group Standards and other documents