

MEETING: Control Command and Signalling Standards Committee
Traffic operation and Management Standards Committee

DATE: 15/12/2022
06/12/2022

SUBJECT: Five-year review of RIS-0737-CCS Issue One - Rail Industry Standard for Signal Sighting Assessment Requirements

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1. Purpose of the paper

- 1.1 This paper sets out the assessment of the five-year review of RIS-0737-CCS Issue One - Rail Industry Standard for Signal Sighting Assessment Requirements. It seeks Standards Committee approval on the recommendation and way forward.

2. Background

- 2.1 In 2010 RSSB established four standard projects to review and update the requirements for lineside signalling systems, considering the application of the strategy for railway standards and the permitted scope of railway group standards. Project 10/017c was established to review and update the signal sighting assessment requirements using a first principles approach with input from signal sighting experts representing Network Rail, railway undertakings (RUs) and the ORR. RIS-0737-CCS issue one was published in June 2016
- 2.2 The opportunity was taken to strengthen the requirements for assessment plans and clarify the responsibilities of IMs and RUs in managing and supporting the assessment process. The factors listed in Appendices A, B and C were derived from an analysis of the lineside signalling system interfaces with train operations, existing good practice set out in the signal sighting workbook (historically used by Network Rail), the SPAD Factor Checklist developed by RSSB and the human factors incident classifications relevant to SPAD events.
- 2.3 The requirements in RIS-0737-CCS cover four topic areas relevant to signal sighting assessment:
- a. The assessment process, including roles and responsibilities.
 - b. The scope of signal sighting assessment
 - c. Requirements for required readable distance (RRD), minimum readable distance (MRD), minimum response time (MRT) and baseline response time (BRT) as they apply to lineside visible objects (signals, indicators and signs).
 - d. Requirements for the configuration of signals, indicators and signs.
- 2.4 All the requirements have a rationale and supporting guidance.
- 2.5 The guidance in RIS-0737-CCS is intended to describe good practice in the planning, resourcing and management of signal sighting assessment activities and how the assessment is used to identify measures that are capable of mitigating the risk of poor readability. The standard lists the hazard precursors that can affect readability and potential solutions.
- 2.6 The five-year review consultation feedback is generally supportive, most comments

proposing only small editorial changes. A few comments suggest changes to the content relating to the application of banner repeater indicators, preliminary route indicators, ETCS block markers and lineside operational signs.

3. Impacts of the document(s) following publication/entering into force

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

- a. **Business case for change** – RIS-0737-CCS was developed before the RSSB business case for change process was introduced. The publication of issue one enabled the withdrawal of requirements from the following railway group standards and guidance notes, which were subsequently withdrawn from the RSSB catalogue:
 - i. GERT8037 Signal Positioning and Visibility.
 - ii. GEGN8537 Guidance on Signal Positioning and Visibility.
 - iii. GKRT0045 Lineside Signals, Indicators and Layout of Signals.
 - iv. GKGN0645 Guidance on Lineside Signals, Indicators and Layout of Signals.
- b. **Deviations** – No applications for an opinion to deviate from a requirement in RIS-0737-CCS have been submitted to RSSB. CCS Standards Committee has noted fourteen Network Rail deviations against RIS-0737-CCS to overcome local application constraints covering requirements in sections 3.2 (MRD), 3.4 (BRT), 4.2 (colour light signal), 4.4 (co-acting signal) and 4.5 (banner repeater). In noting these deviations, CCS SC decided that no changes to the standard were required.
- c. **Current projects or proposals being processed** – No proposals are being processed to update or amend the content in RIS-0737-CCS.
- d. **Limited change release** – No limited change released have been issued.
- e. **Amendments and clarifications** – No amendments or clarifications have been issued.
- f. **Enquiries** – A review of enquiry records has identified that the content in RIS-0737- should be clarified at the next update:
 - i. Documenting an agreement so that the responsibility for chairing a signal sighting committee can be transferred to a railway undertaking for the assessment of platform stop markers.
 - ii. Documenting good practice for the application of buffer stop lights, considering the different requirement applied by London Underground Ltd.
 - iii. Strengthening the rationale for the 4 s BRT used to calculate the MRT for an ETCS block marker when operating in OS.
 - iv. Strengthening the guidance on the optimum position for the most restrictive aspect shown by a signal, considering circumstances where multiple signals are mounted on the same gantry.
- g. **Research projects** – No research projects include signal sighting assessment within their scope.
- h. **Changes in regulations** – No changes in regulations are relevant to signal sighting assessment.
- i. **Changes in technology** – RIS-0737-CCS includes guidance on the application of simulation techniques to signal sighting assessment. Since its publication in 2016,

Network Rail has gained further experience in undertaking signal sighting assessment in an office environment, and current practices discourage any work that means that personnel need to access the lineside. The guidance will be updated to reflect current good practice.

- j. **National Technical Specification Notices (NTSNs) and European standards** – The CCS NTSN does not include any requirements relevant to signal sighting assessment. The OPE NTSN includes a requirement that the ‘visibility’ of lineside visible objects is confirmed before train operations commence. The requirements in RIS-0737-CCS can be used to achieve conformity with the OPE NTSN. The reference to the OPE TSI is out of date as it has been superseded by the OPE NTSN.
- k. **Published list of NTRs** – Not applicable.
- l. **Any other observations:**
 - i. The format of RIS-0737-CCS does not comply with the current template for a RIS. The document will need to be uploaded to the RSSB requirements management database (RMDB), which provides the opportunity to make editorial changes to improve the layout and balance of the standard.
 - ii. Although the standard is titled ‘Signal Sighting Assessment Requirements’, the control of risk means that all trackside visible objects must be fit for purpose in the operational context, including objects that are not part of the signalling system. The next revision provides the opportunity to extend the scope to include lineside operational signs that are not part of a signalling system.
 - iii. Some of the terminology used in RIS-0737-CCS is inconsistent with more recent RSSB CCS standards, for example the term ‘compatibility’ where this describes the interface with a person or role. The terms IM (stations) and IM (network) are no longer appropriate to use.
 - iv. Some of the terms, definitions and references are out of date.
 - v. Network Rail has updated the training course used to support the development of signal sighting committee chairs, considering the content in RIS-0737-CCS issue one. Feedback from the training delivery is that some of the guidance in Appendices A to C is difficult to understand, for example, it is not clear how the factors are related to each other. It has been suggested that it would be beneficial to include photographs of some real examples to supplement the diagrams showing the configuration of signals.

4. Discussion

4.1 Review assessment

- 4.1.1 This 5-year review confirms that RIS-0737-CCS is broadly fit for purpose however there are some sections where updates would make sure that the content remains relevant to practitioners and continues to reflect current good practice.
- 4.1.2 RIS-0737-CCS issue one is a large document (117 pages) with 66 requirements. Most of the content is guidance on how to meet the requirements. Updating the standard would provide the opportunity to edit and reformat the content to make it easier to follow.
- 4.1.3 The hazard of a trackside visible object that is difficult to see, read or interpret is applicable to several structural subsystems, not just lineside signalling assets. The rigor applied to the signal sighting assessment might be disproportionate to the assessment of other assets, however requirement to undertake an assessment before a change is put into use is relevant to risk mitigation.

- 4.1.4 The guidance in RIS-0737-CCS issue one does not take account of recent operational innovations that impact on the train driving task, for example, the introduction of multimode trains and power changeover locations.

5. Recommendations

5.1 Standards committees are asked to:

- a. DISCUSS the assessment of the five-year review and the proposed recommendation to initiate a change project to:
 - i. Review, update and extend the scope of RIS-0737-CCS to include the assessment of all trackside visible objects.
 - ii. Develop updated good practice in the positioning and configuration of signals, indicators and lineside operational signs.
 - iii. Improve the layout to make the document easier to follow.

5.2 CCS Standards Committee is asked to APPROVE the recommendation.

5.3 Supporting Standards Committees are asked to SUPPORT the recommendation.

RSSB completion:

<i>Lead Standards Committee</i>	<i>Meeting date</i>	<i>Recommendation approved</i>	<i>Minute numbers</i>		<i>Next review date</i>
			<i>Pre-consultation review</i>	<i>Post-consultation review</i>	
Control Command and Signalling	15/12/2022				