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OPINION

ERA/OPI/2017-5

OF THE EUROPEAN UNION AGENCY FOR RAILWAYS

for

European Commission

regarding

a possible revision of CCS TSI - test specifications

Disclaimer:

The present document is a non-legally binding opinion of the European Union Agency for Railways. It does not represent the view of other EU institutions and bodies, and is without prejudice to the decision-making processes foreseen by the applicable EU legislation. Furthermore, a binding interpretation of EU law is the sole competence of the Court of Justice of the European Union.

1. General Context

- 1.1. The European Commission (DG MOVE) has requested a technical Opinion pursuant to Article 10(2) of Regulation (EU) 2016/796 on the European Union Agency for Railways concerning the current reserved subsets 076 and 094 in CCS TSI for B3 R2 and debug reported errors in subsets 076 and 094 in CCS TSI for B3 MR1. This request was addressed to the Executive Director by letter on 3rd October 2017 (Ares(2017)4807641)
- 1.2. The European Rail Traffic Management System (ERTMS) is a complex software-based system that needs constant monitoring, update and upgrading; In its capacity as System Authority for the ERTMS, the Agency has set up a change control management system for the ERTMS specifications, involving the Sector organizations, in order to collect feedback from the implementation of the system.
- 1.3. The Agency has received feedback from ERTMS accredited laboratories and the European Industry (UNIFE/Unisig) concerning deficiencies in the Index 37 b), 37c) and 37 d) of Table 2.2 of Annex A of the Commission Regulation (EU) 2016/919, i.e. it refers to the Subset-076 for the B3 MR1.
- 1.4. The current Index 31, 37 b), 37c) and 37 d) of Table 2.3. of Annex A of the Commission Regulation (EU) 2016/919 are indicated as "reserved" and the note 13 of the Annex A states that these indexes will be set out in a technical opinion of the Agency, i.e. it refers to the Subset-076 and Subset-094 for the B3 R2.

2. Legal Background

- 2.1. According to the provisions of Article 10(2) of *Regulation (EU) 2016/796*¹ (the Agency Regulation), the Agency must issue opinions at the request of the Commission on amendments to any act adopted on the basis of the Interoperability Directive (Directive (EU) 2016/797²).
- 2.2. One of the acts adopted on the basis of the Interoperability Directive is the CCS TSI (The Technical Specifications for Interoperability for the on-board and trackside Control Command and Signalling subsystems) adopted by Commission Regulation (EU) 2016/919³.
- 2.3. The above-mentioned request of the European Commission, is formulated on the basis of Article 10(2) of the Agency Regulation, and concerns elements of the CCS TSI. The Agency is requested to issue an opinion to cover the current reserved Subsets 076 and 094 in CCS TSI for the ETCS Baseline 3 Release 2 and debug reported errors in subsets 076 and 094 in CCS TSI for ETCS Baseline 3 Maintenance Release 1.
- 2.4. The present Opinion is developed to answer this request of the European Commission.

3. Analysis

- 3.1. The revised TSI for the onboard and trackside CCS subsystems has been adopted by Commission Regulation (EU) 2016/919 of 27 May 2016 on the technical specification for interoperability relating

¹ *Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways and repealing Regulation (EC) No 881/2004, OJ L 138, 26.5.2016, p. 1*

² *Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union, OJ L 138, 26.5.2016, p. 44*

³ *Commission Regulation (EU) 2016/919 of 27 May 2016 on the technical specification for interoperability relating to the control-command and signalling subsystems of the rail system in the European Union, OJ L 158, 15.6.2016, p. 1.*

⁴ *OJ L 138, 26.5.2016, p. 1.*

⁵ *OJ L 138, 26.5.2016, p.102.*

⁶ *OJ L 315, 3.12.2007, p. 51.*

⁷ *OJ L 138, 26.5.2016, p. 44.*

to the control-command and signalling subsystems of the rail system in the European Union⁸ (hereafter CCS TSI).

- 3.2. The specifications defining the functional behaviour for the ERTMS/ETCS are set up in the Index 4 of the Annex A (System Requirements Specifications) of the Commission Regulation (EU) 2016/919.
- 3.3. The corresponding on-board test requirements documents are indicated in the Index 37b), 37c) and 37 d) of Annex A of the Commission Regulation (EU) 2016/919, the so called ETCS Subset-076.
- 3.4. The corresponding laboratory architecture to the test requirements are indicated in Index 31 of Annex A of the Commission Regulation (EU) 2016/919, the so called ETCS Subset-094.
- 3.5. The European Union Agency for Railways has overseen the activities of a working group composed of laboratories accredited to perform ERTMS/ETCS tests according to the requirements of the TSI chapter 6 and of a Notified Body. This working group has drafted the test specifications for ETCS, including the "test cases" and "test sequences" corresponding to the debugging of the documents referenced in Index 37b), c) and d) in the table A2.2 and the reserved documents referenced in Index 31, 37b), c) and d) in the table A2.3.
- 3.6. The test cases have been developed based on the System Requirement Specifications version 3.4.0 and 3.6.0 (Index 04 in the table A2.2 and A2.3). They have been reviewed by experts of UNIFE/Unisig.
- 3.7. The on-board test architecture enabling the testing of the Subset-076 based on the System Requirement Specifications version 3.6.0 (Index 04 in the table A2.3) has been transposed into the functional architecture in the Subset-094.
- 3.8. The test sequences have been developed and validated by the use of experts check, a software tool ("the TSD" which has been consistently used for the development of ETCS test specifications since 2008) and industrial prototypes provided by the industry.
- 3.9. The methodology used to develop the test specification is proven and has been used since 2004 (Decision 2004-447-EC). The test specifications for ERTMS/ETCS Baseline 2 and Baseline 3 Maintenance Release 1 currently in force have been developed by the same actors in a similar working group.
- 3.10. The test cases and test sequences are traced back to requisite expressed in the SRS document (Index 04 in the table A2.2 and A2.3) . The scope, methodology used and guide to assess the test results are available in a set of accompanying documents which will be referenced in the corresponding Application Guide.

⁸ OJ L 158, 15.6.2016, p. 1.

4. The opinion

4.1. Proposed amendments to the TSI CCS

4.1.1. On the basis of this analysis, the opinion of the Agency is that:

4.1.2. The updated test specifications documents referenced in Index 37b, 37c and 37d of Annex A Table 2.2 to the Commission Regulation 2016/919 are available and ready to be inserted in the set of mandatory specifications.

4.1.3. The test architecture referenced in Index 31 and test specifications documents referenced as “reserved” in Index 37b), 37c) and 37d) of Annex A Table 2.3 to the Commission Regulation 2016/919 are available and ready to be inserted in the set of mandatory specifications.

4.1.4. The table A2.2 the Index 37b), 37c) and 37d) should be amended as follows:

Index No	Set of specifications # 2 (ETCS Baseline 3 Maintenance Release 1 and GSM-R Baseline 1)			
	Reference	Name of Specification	Version	Notes
37 b	SUBSET-076-5-2	Test cases related to features	3.2.0	
37 c	SUBSET-076-6-3	Test sequences	3.1.0	
37 d	SUBSET-076-7	Scope of the test specifications	3.2.0	

4.1.5. The table A2.3 the Index 31, 37b), 37c) and 37d) should be amended as follows:

Index No	Set of specifications # 3 (ETCS Baseline 3 Release 2 and GSM-R Baseline 1)			
	Reference	Name of Specification	Version	Notes
31	SUBSET-094	Functional requirements for an onboard reference test facility	3.1.0	
37 b	SUBSET-076-5-2	Test cases related to features	3.3.0	
37 c	SUBSET-076-6-3	Test sequences	3.2.0	
37 d	SUBSET-076-7	Scope of the test specifications	3.3.0	

4.1.6. The Note 13 in Annex A should be deleted.

4.2. Proposed documents to be included in the TSI CCS Application Guide

4.2.1. The following documents are proposed to be included in the TSI CCS Application Guide for the B3 MR1

Set of specifications # 2 (ETCS Baseline 3 Maintenance Release 1 and GSM-R Baseline 1)			
Reference	Name of Specification	Version	Notes
ERA/ERTMS/040092	ERTMS/ETCS test plan and methodology	1.0.0	Index 37
ERA/ERTMS/040093	Test database	3.2.0	Index 37
ERA/ERTMS/040063	Test sequences evaluation and validation	3.0.0	Index 37

4.2.2. The following documents are proposed to be included in the TSI CCS Application Guide for the B3 R2

Set of specifications # 2 (ETCS Baseline 3 Release 2 and GSM-R Baseline 1)			
Reference	Name of Specification	Version	Notes
ERA/ERTMS/040092	ERTMS/ETCS test plan and methodology	1.1.0	Index 37
ERA/ERTMS/040093	Test database	3.3.0	Index 37
ERA/ERTMS/040063	Test sequences evaluation and validation	3.0.0	Index 37

Valenciennes, 26.10.2017


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Executive Director

ANNEX 1