

OPINION

OPI 2026 - 14

OF THE EUROPEAN UNION AGENCY FOR RAILWAYS

for

THE EUROPEAN COMMISSION

regarding

CCS TSI – updated ETCS testing 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 Commission Regulation (EU) 2026/693 (CCS TSI)¹ defines in table B3b item 2 a transition regime for the application of TSI points Appendix A, Table A2, Indexes 31 (SUBSET-094 'Functional requirements for an on-board reference test facility' v4.0.0), 37b (SUBSET-076-5-2 'Test cases related to features' v4.0.0), 37c (SUBSET-076-6-3 'Test sequences' v4.0.0) and 37d (SUBSET-076-7 'Scope of the test specifications' v4.0.0).

Table B3b

Transition regime for CCS Interoperability Constituents

No	TSI point(s)	TSI point(s) in the version before the change introduced by Implementing Regulation (EU) 2023/1695	Explanation on CCS TSI change introduced by Implementing Regulation (EU) 2023/1695	Transition regime for TSI changes introduced by Implementing Regulation (EU) 2026/693
1	Appendix B, Table B3	Appendix B, Table B3 clarifications	Clarifications and corrections regarding the transition regime.	Directly applicable

No	TSI point(s)	TSI point(s) in the version before the change introduced by Implementing Regulation (EU) 2023/1695	Explanation on CCS TSI change introduced by Implementing Regulation (EU) 2023/1695	Transition regime for TSI changes introduced by Implementing Regulation (EU) 2026/693
2	Appendix A, Table A 2, Indexes 31, 37b, 37c and 37d.	Appendix A, Table A 2, Indexes 31, 37b, 37c and 37d.	The updated versions of the document are included.	Applicable as of the latest 1 July 2026 or the availability of the new version Subst 76 as an Agency Technical Opinion
3	Appendix A Table index 104	Appendix A Table index 104	Updated version of the document is included	Applicable six months after EiF

- 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 (art. 28 regulation (EU) 2016/796), 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 the Representative body EAL representing the ERTMS accredited laboratories concerning deficiencies in the documents referred to in indexes 31, 37b, 37c and 37d after the publication of the Recommendation ERA1218-2 of the European Union Agency for Railways on the amendment of Commission Implementing Regulation (EU) 2023/1695 (CCS TSI) – issued on the 19th of December 2024 – proposing those indexes in version 4.0.0.
- 1.4. The errors originating from that feedback are logged in the database of Change Requests (CR)², according to Article 28 of the Regulation (EU) 2016/796.
- 1.5. The Agency, in collaboration with the experts of the Sector organizations, has carried out the analysis and assessment of the CR '1515' in the database that can be considered as errors in the test specifications, with a view to identify if those errors could prevent the certification of an ETCS on-board interoperability constituent and would require an updated version of the SUBSET-076 and/or SUBSET-094. The result of this work is presented in this Opinion. The scope of the analysis is to report on
- the possibility to rely on mitigation measures that would allow the execution of a test campaign based on SUBSET-076 and SUBSET-094 v4.0.0.

¹ Commission Regulation (EU) 2026/693 of 19 March 2026 amending Implementing Regulation (EU) 2023/1695 as regards new testing specifications, a set of reduced specifications and transitional measures

² With the reference '1515' in the database
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2. Legal Background

- 2.1. According to provisions of Article 10(2) of Regulation (EU) 2016/796, 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) 2016/797).
- 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 the Commission Regulation (EU) 2026/693.
- 2.3. According to item 2 of Table B3b of the Commission Regulation (EU) 2026/693 (CCS TSI), the transition regime is defined by 'Applicable as of the latest 1 July 2026 or the availability of the new version Subset 76 as an Agency Technical Opinion'

3. Analysis

- 3.1. The on-board test specifications documents are indicated in indexes 37b, 37c and 37d of the Appendix A of the CCS TSI, the so called ETCS SUBSET-076.
- 3.2. The corresponding laboratory architecture are indicated in index 31 of the Appendix A of the CCS TSI, the so-called SUBSET-094.
- 3.3. The Agency has overseen the activities of a working group composed of laboratories accredited according to ISO 17025 to perform ETCS tests according to the requirements of the TSI CCS §6.2.4.1 “Mandatory tests for the on-board ETCS” and UNISIG representatives. This working group has drafted the test specifications for ETCS, including the “test cases” and the “test sequences”.
- 3.4. The tests cases and test sequences have been developed based on the System Requirements specifications version 4.0.0 (index 04 in the table A2).
- 3.5. The methodology used to develop the test specifications is proven in use and has been used since 2004 (Decision 2004-447-EC). The test specifications for ERTMS/ETCS Baseline 2, Baseline 3 Maintenance release 1 and Baseline 3 Release 2 have been developed by the same actors in a similar working group.
- 3.6. After the publication of the Recommendation ERA1218-2, the Agency has received from the association of ERTMS accredited laboratories a list of deficiencies within SUBSET-076 and SUBSET-094.
- 3.7. These deficiencies concern mainly missing files. The exhaustive list of deficiencies has been detailed in the CR1515, see file < Issues_description_for_next_TO_140726.xlsx> in **Annex A** of this opinion.
- 3.8. The deficiencies have been classified into 3 categories and for each of the categories, a risk analysis has been performed and mitigations measures are proposed:
- 3.9. Coverage error:
 - Identified risks: some Test case(s) may not be covered during the test campaign.
- 3.10. Functional errors:
 - Identified risks: some Test sequence(s) cannot be run entirely or may lead to wrong evaluation results; an adaptation (correction/replacement) is required
- 3.11. Editorial errors:
 - Identified risks: None - an incorrect information needs to be corrected; it has no impact on the results of test campaigns
- 3.12. Mitigation measures
 - According to ISO 17025:2017 §7.1.1, §7.1.2, §7.1.3, §7.1.4 the laboratory shall inform its customer (ETCS on-board supplier) about the missing test cases/test sequences or about the wrong allocation of a test sequence vs a specific on-board configuration/envelope of supported versions or about the inadequacy to run some test sequences with SUBSET-076/SUBSET-094 v4.0.0. In case the customer decides to perform the test campaign with the corrected test sequences (see §3.13 below), §7.2.1.3 of ISO17025:2017 will apply, considering that the publication of the updated/missing test sequence in the ERA database is meeting the clause §7.2.1.4 of ISO17025:2017 in particular “*Methods published either ...or by reputable technical organizations..., are recommended*”.
 - In all cases the last paragraph of TSI CCS §6.2.4.1 will apply “*The laboratory shall provide a full report clearly indicating the results of the tests cases and sequences used. The Notified Body is responsible to assess the suitability of test cases and sequences to check compliance with all relevant requirements and to evaluate the results of tests in view of the certification of the Interoperability Constituent.*”

- Moreover, according to §6.2 of ERA_ERTMS_040063 v400³ TEST SEQUENCE VALIDATION AND EVALUATION FOR SUBSET-076, a specific procedure is foreseen in case of failure detected during the execution of a test sequence during a test campaign. Therefore, the capability for an ERTMS accredited laboratory to modify and adapt a test sequence to meet the original objectives of a test sequence (or test case) is not a new feature introduced in ETCS B4R1 but it is rather a practice proven in use this last decade and part of the methodology itself.

3.13. The working group has worked to propose error corrections for each of the individual items. These corrections could result in modifications in existing test cases or test sequences including supporting editorial files such as the speed profile files – these modifications always resulting in the generation of new files – or creation of new test cases or new test sequences. These proposed corrections are part of CR1515, see files

<WGSS076_solution_proposal_for_CR1515_090726.docx>,
<SpeedProfiles_v400_svg_CR1515_item08_20260819.zip>, <SEQUENCES_CR1515_20260714.zip>,
<Subset-076-5-2-5040300_CR1515_18.pdf > in **Annex A** of this opinion.

3.14. Finally, the working group has delivered a file identifying the modified or added test sequences compared to those ones published in CCS TSI (EU) 2026/693, see file
<WGSS076_Updated_lists_of_TS_260626> in **Annex A** of this opinion.

³ Although the document is informative only, which is justified by the fact that it does not include any requirement for an ETCS on-board manufacturer, the Agency is of the opinion that this document serves as a basis for laboratories seeking for an ISO17025 accreditation for SUBSET-076/SUBSET-094.

4. The opinion

- 4.1. Based on the above, the Agency does not consider that the errors identified in CR1515 require immediate revision of the CCS TSI nor a publication of a complete release of SUBSET-076 and SUBSET-094. Such revision of the ERTMS test specifications to include all error corrections should be available in the next CCS TSI revision and will be addressed by the Agency through a Recommendation to the Commission to update the Appendix A of the CCS TSI.
- 4.2. According to item 2 of Table B3b of the CCS TSI in which the transition regime defines 'Applicable as of the latest 1 July 2026 or the availability of the new version Subset 76 as an Agency Technical Opinion', the SUBSET-076 and SUBSET-094 (v4.0.0) with this amendment/corrigendum (CR1515) is applicable from the publication date of this Technical Opinion.
- 4.3. The requirements applicable to laboratories accredited in accordance with ISO/IEC 17025 ensure that the appropriate mitigation measures, and/or the error corrections identified in CR1515, can be implemented in a controlled and traceable manner, thus enabling the execution of a test campaign in compliance with SUBSET-076 and SUBSET-094 v4.0.0.

Qualified electronic signature by: OANA

RODICA GHERGHINESCU

Date 2026-10-09 10:09:56 UTC

Valenciennes,

Oana GHERGHINESCU
Executive Director

ANNEX A – files_ready_for_TO_220926

See separate documents in <Annex A files_TO.zip>

ANNEX B Impact Assessment Note

Issued as per Art. 8(1) of Regulation (EU) 2016/796 and the Impact Assessment procedure adopted by the ERA Management Board (Decision n.290, 16/03/2022)

1. Context and assessment of impacts																															
1.1. The context and the CRs in subject																															
During the adoption process of the amendment of Commission Implementing Regulation (EU) 2023/1695, stakeholders identified potential gaps in the testing specifications included in SUBSET 076 v4.0.0 included in the ERA Recommendation ERA1218-2 (1). This resulted in a transition regime for CCS Interoperability Constituents included in row 2 of Table B3b in Appendix B of Annex I of the Implementing Regulation (EU) 2023/1695. The transition regime lasts until at the latest 1 July 2026 or the availability of the new version of Subset 076 as an Agency Technical Opinion. The issues were identified by the representative body EAL (ERTMS Accredited Laboratory) and recorded in the database of change requests under the reference CR 1515. After closing the cited CR the publication of the error correction with this technical opinion finalizes the transition regime period.																															
1.2. Analysis performed																															
After having analysed the Change Request 1515 and all the provided documents in the context of the Control Change Management (CCM) process, the group of experts have decided to close the CR. As pre established by the transition regime set out in row 2 of Table B3b of Commission Implementing Regulation 2026/693 this technical opinion defines the end of the transition regime.																															
1.3. Assessment of impacts																															
Impacts were informed and assessed during the CCS Working Party meetings #76 and #77 and at RISC 107																															
1.4. Stakeholders affected																															
<table border="1"> <tr> <td>Railway undertakings (RU)</td><td>☒</td><td>Member States (MS)</td><td>☐</td></tr> <tr> <td>Infrastructure managers (IM)</td><td>☒</td><td>Third Countries</td><td>☐</td></tr> <tr> <td>Manufacturers</td><td>☒</td><td>National safety authorities (NSA)</td><td>☐</td></tr> <tr> <td>Keepers</td><td>☐</td><td>European Commission (EC)</td><td>☐</td></tr> <tr> <td>Entity Managing the Change (EMC)</td><td>☐</td><td>European Union Agency for Railways (ERA)</td><td>☐</td></tr> <tr> <td>Notified Bodies (NoBo)</td><td>☒</td><td>Shippers</td><td>☐</td></tr> <tr> <td>Associations</td><td>☐</td><td>Other (Please specify) ...</td><td>☐</td></tr> </table>				Railway undertakings (RU)	☒	Member States (MS)	☐	Infrastructure managers (IM)	☒	Third Countries	☐	Manufacturers	☒	National safety authorities (NSA)	☐	Keepers	☐	European Commission (EC)	☐	Entity Managing the Change (EMC)	☐	European Union Agency for Railways (ERA)	☐	Notified Bodies (NoBo)	☒	Shippers	☐	Associations	☐	Other (Please specify) ...	☐
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2. Preferred option**2.1. Recommendation**

There are no options. Therefore the recommendation is to follow the principles set in this Technical Opinion

3. Sources and methodology**7.1. Sources**

Desk research	☐	Interviews	☐
ERA database	☐	Meetings	☒
External database	☐	Survey	☐