EUROPEAN UNION AGENCY FOR RAILWAYS

Making the railway system work better for society.

ANNEX

Light Impact Assessment

ERTMS –Opinion 2017-2

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Document History

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First draft	25/09/2017	
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2.0	03/10/2017	Accepted OG comments, clean version

Contents

1. Context and problem definition

<table>
<tr><td>1.1. Problem and problem drivers</td><td>The European Rail Traffic Management System (ERTMS) is a complex software-based system; the Agency has set up a change control management system for the ERTMS specifications, involving the Sector organizations, to collect feedback from implementation.

The findings originated from those feedback and return of experience are logged in the database of Change Requests (CR), as per Article 28 of the Regulation EU 2016/796 (“the Agency Regulation”).

According to Article 10 of the Technical Specification for Interoperability for the on-board and trackside Control Command and Signalling (CCS TSI) subsystems Commission Regulation (EU) 2016/919:

“If errors that do not allow the system to provide normal service are detected the Agency shall publish as early as possible the respective solutions to correct them as well and the evaluation of the impact in the compatibility and stability of the existing ERTMS deployment. Within one year of the date of application of this Regulation, the Agency shall send to the Commission a technical opinion on the state of the findings logged in the ERTMS change request database”.

Problem addressed: The Agency has identified in the database with ETCS Change Request database 22 logged errors as potentially not allowing the system to provide normal service.

This analysis has ben carried out using the methodology defined in the subset-104</td></tr>
<tr><td>1.2. Main assumptions</td><td>N.a.</td></tr>
<tr><td>1.3. Stakeholders affected</td><td><table><tr><th>Category of stakeholder</th><th>Importance of the problem</th></tr><tr><td>IM, RU, ERTMS Manufacturers</td><td>4</td></tr></table></td></tr>
<tr><td>1.4. Evidence and magnitude of the problem</td><td>At the end of 2017 more than 4000 km of lines will be in operation with ERTMS on the Core Network Corridors, and almost 7000 vehicles are equipped or contracted in the EU [EC staff draft working document “ERTMS Deployment Action Plan”].

The potential incompatibilities identified in the CR database can jeopardize the EU wide deployment of the system defined in the European Deployment Plan (EDP) EU Regulation 2017/6.

Different interpretation of the specifications will harm standardization.</td></tr>
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1.5.	**Baseline scenario**	If no action is taken, the application of the current specifications referenced within the TSI CCS are likely to generate **additional costs for the IMs and RUs, due to the risk of non interoperability.** There will be likely also impact on **Manufacturers**, due to the indirect effect that the lack of interoperability and standardization will have on the market for ETCS.
1.6.	**Subsidiarity and proportionality**	The problem is linked to ETCS specifications which are part of the TSI CCS.

2. Objectives

2.1. Strategic and specific objectives	☐ Europe becoming the world leader in railway safety ☒ Promoting rail transport to enhance its market share ☒ Improving the efficiency and coherence of the railway legal framework ☐ Optimising the Agency's capabilities ☐ Transparency, monitoring and evaluation ☒ Improve economic efficiency and societal benefits in railways ☐ Fostering the Agency's reputation in the world **Specific objectives**: 1. Ensure **an effective reference for the design, implementation and assessment** of the ETCS subsystems onboard and trackside 2. **Give guidance** on the necessary steps to implement the reference taking account of the existing installed base
2.2. Link with Railway Indicators	The evolution of remaining errors in the ERTMS CCM-database (RI3.3). Status of June 2017: 42 errors, compared to 40 in December 2016. This opinion defines, for all errors impacting normal service, the solution and the short term mitigation measures, except for 3 CRs for which work is planned.

3. Options

3.1. List of options	Option 0 (Baseline): do nothing Option 1: Transparent publication of CRs with problem description, short term mitigation and longer term solution Option 2: Update of the TSI CCS with corrected specifications.
3.2. Description of options	**Option 0 (Baseline): do nothing** No publication of CRs and no update of CCS TSI **Option 1: Transparent publication of CRs with problem description, short term mitigation and longer term solution** Publication of list of identified CRs and of their solutions as targets for 2022, together with the information and guidance to allow identification of actual situations in deployment. The management of the mitigations and of the upgrades to the system are among the key commitments identified in the Memorandum of Understanding on ERTMS. **Options 2: Update of the CCS TSI with the corrected specifications** All the corrected specifications will be included in a recommendation to revise CCS TSI.
3.3. Uncertainties/risks	In **Option 1**, there are important efforts required from IM, RU and Manufacturers to assess the impact of each identified CR in their actual products and systems and to define and implement trackside mitigations or the recommended solutions when applicable. There is also the request to Manufacturers to make detailed information on their products/systems available to their clients, and also to the IM concerning ERTMS-fitted vehicles operating on these network(s).

4. Impacts of the options

4.1. Impacts of the options (qualitative analysis)	**Option 0 (Baseline): do nothing** ***Negative impacts:*** The interoperability risks identified are likely to cause additional costs for IMs and RUs, delays for projects to enter in commercial service, and reputational damages to the ERTMS project and the actors involved [see 1.5]. **Option 1: Transparent publication of CR with problem description, short term mitigation and longer term solution** ***Positive impacts***: *(1) Transparent detailed information will enable economic actors to make informed decisions.* *(2) Identification of harmonized solutions with a target date (2022) will avoid divergent developments.*

	(3) *Recommended mitigation measures offer short term solutions in view of the timeframe necessary for compliant products and systems to be available on the market.* ***Costs:*** (1) ***IMs:*** *depending on the specific implementations and on the combination of ERTMS-equipped trains in service and expected in the near future, there can be costs for correcting errors in trackside implementation and or costs for implementing mitigation measures.* (2) ***RUs:*** *depending on the specific on-board system installed on the vehicles, there can be the costs for the upgrade of the onboard software at a certain date in the future (by 2022).* **Options 2: Update of the CCS TSI with the corrected specifications** ***Negative impacts:*** (1) *The mere update of the legal reference has no immediate effect on the systems in service or under development. A poignant example is the fact that today most of the ETCS systems in service are not based on Baseline 3 specifications (first adopted in 2012).* (2) *The update of the specifications, if not accompanied by the measures proposed in option 1, will not avert the problems and associated costs identified in section 1.5 above*
4.2. Impacts of the options (quantitative analysis)	N.a.

5. Comparison of options and preferred option

No comparison of options was necessary.

The only feasible option, which meets the specific objectives addressed by this opinion is **Option 1.**

Option 0 is likely to generate additional costs and project delays and uncertainties, while hampering interoperability.

Option 2 addresses the problem only in the abstract space of the specifications, without offering concrete and timely guidance for mitigations and harmonization in the intermediate period.

6. Monitoring and evaluation

6.1. Monitoring indicators	N.a.
6.2. Future evaluations	The ERTMS Stakeholder Platform is the appropriate forum to ensure the follow up and evaluation of the implementation of the measures proposed in the Opinion.