EUROPEAN UNION AGENCY FOR RAILWAYS

Making the railway system work better for society.

Light Impact Assessment

Amendment of the INF TSI

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Document History

Version	*Date*	*Comments*
0.1	04/07/2017	First draft, elaborated by MS,MG,IM
0.2	05/07/2017	Quality check by OG
1.0	11/07/2017	Final draft – after internal review

Contents

1. Context and problem definition

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<tr><td>1.1. Problem and problem drivers</td><td>The current provisions of INF TSI trigger a persisting number of infrastructure related national technical rules arising from:

1. allowing different load carrying capabilities of new and existing structures

2. forcing harmonization of the design track parameters to ensure compatibility with Eddy Current Braking Systems

3. the missing requirements for ballast pick up at INF side</td></tr>
<tr><td>1.2. Main assumptions</td><td>N/A</td></tr>
<tr><td>1.3. Stakeholders affected</td><td>For Problem 1 Different load carrying capabilities

<table>
<tr><th>Category of stakeholder</th><th>Importance of the problem</th></tr>
<tr><td>Infrastructure Managers</td><td>3

The current and future infrastructure (structures) is only compatible with a specific set of vehicles</td></tr>
<tr><td>Vehicle Manufacturers</td><td>4

There is an additional cost impact for suppliers to adapt their vehicles to load carrying capabilities in each Member State</td></tr>
<tr><td>Railway Undertakings</td><td>4

Currently and in future there is reduced compatibility of the vehicles operated with the European Network (if vehicles are not adapted)</td></tr>
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For **Problem 2** Compatibility with Eddy Current Braking System

Category of stakeholder	*Importance of the problem*
Infrastructure Managers	4 There is a risk for additional cost for the construction of new or upgraded lines if harmonized parameters would be defined in the TSI ensuring compatibility with Eddy Current Braking Systems.
Railway Undertaking	1 RUs are not directly impacted. They need information where they can operate vehicles with Eddy Current brakes

For **Problem 3** Missing requirements for ballast pick up

Category of stakeholder	*Importance of the problem*
Infrastructure Managers	3 The infrastructure (ballast bed) is compatible with a limited set of HS trains
Vehicle Manufactures	4 Vehicle Suppliers need to adapt high speed trains depending on different requirements related to ballast pick up.
Railway Undertaking	4 RUs can currently operate on a limited number of HS trains due to different ballast pick up requirements.

1.4. Evidence and magnitude of the problem	Evidence was provided by the experts in the INF TSI WP (see report of the Agency related to this amendment).
1.5. Baseline scenario	If no action is taken, the provisions from the INF TSI in force (2014) apply. These would have the following main negative consequences: - allowing **different load carrying capabilities** of new and existing structures leads to additional design costs for manufacturers

	- **forcing harmonization of the design track parameters** to ensure compatibility with Eddy Current Braking Systems is overproportionate and generates unjustified costs for infrastructure managers - the missing **requirements for ballast pick up at INF side** hamper the design of vehicles.
1.6. Subsidiarity and proportionality	Problem 1 and 3 The infrastructure design parameters addressed by the problem need to be harmonized in the framework of the TSI as they indirectly impact interoperability of the TSI conforming vehicles. Problem 2 The discussion in the WP demonstrated that this infrastructure design parameter can be better managed at Member State level and there are already other ways in place to manage compatibility of infrastructure with vehicles equipped and using Eddy Current Braking Systems (e.g. via RINF). Therefore – strictly applying the subsidiarity principle – this parameter was removed from the TSI.

2. Objectives

2.1.	**Strategic and specific objectives**	<Mark, as appropriate, **the strategic objective(s) of the Agency** with which this initiative is coherent.> ☒ 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 objective**: Reduce the number of infrastructure related National Technical Rules impacting vehicle design and operation
2.2.	**Link with Railway Indicators**	2.1 Evolution of the applicable National Technical Rules for vehicles

3. Options

3.1.	**List of options**	Baseline Option 1 : Amendment of the INF TSI
3.2.	**Description of options**	Baseline The INF TSI (2014) currently in force. Option 1 : Amendment of the TSI The draft revised INF TSI, ERA-REC-127. This includes the closure of the following Open Points (linked with the problems described under section 1.1) Linked to Problem "Different load carrying capabilities" • *Appendix E and F of INF TSI: capability requirements for structures to withstand loads from loco-hauled passenger trains (partly closed)* • *Minimum factor alpha (α) for Traffic codes P1520 and F1520 (point 4.2.7.1.1 in INF TSI)* Linked to Problem "Compatibility with Eddy Current Braking System" • *Requirements for the design of track, including switches and crossings, which are compatible with the use of eddy current braking systems (point 4.2.6.2.2 in INF TSI)* Linked to Problem "Missing requirements for ballast pick up" • *Requirements for mitigating the risk related to the "ballast pick up" phenomenon (point 4.2.10.3 in INF TSI)*
3.3.	**Uncertainties/risks**	N/A

4. Impacts of the options

4.1. Impacts of the options (qualitative analysis)

Category of stakeholder		*Option Baseline*
Infrastructure Manager	Positive impacts	-
	Negative impacts	The current and future infrastructure (structures) is only compatible with a specific set of vehicles IMs might face a risk for additional cost for the construction of new or upgraded lines if harmonized parameters would be defined in the TSI ensuring compatibility with Eddy Current Braking Systems. The infrastructure (ballast bed) is compatible with a limited set of HS trains
Vehicle Manufacturer	Positive impacts	-
	Negative impacts	There is an additional cost impact for suppliers to adapt their vehicles to load carrying capabilities in each Member State Vehicle Suppliers need to adapt high speed trains depending on different requirements related to ballast pick up
Railway Undertakings	Positive impacts	-
	Negative impacts	Currently and in future there is reduced compatibility of the vehicles operated with the European Network (if vehicles are not adapted). RUs can currently operate on a limited number of HS trains due to different ballast pick up requirements.

Category of stakeholder		*Option Amendment of the INF TSI*
Infrastructure Manager	Positive impacts	New/ Updated/ Renewed Infrastructure will be open to more vehicles and therefore to more potential RUs
	Negative impacts	There might be a limited impact in increase of maintenance costs of infrastructure (e.g. related to ballast pick up)

		Vehicle Manufacturer	Positive impacts	Less remaining vehicles related NTRs resulting from infrastructure constraints. This will probably decrease authorisation and design costs
			Negative impacts	-
		Railway Undertakings	Positive impacts	More compatible routes for their TSI conforming vehicles.
			Negative impacts	-
4.2.	**Impacts of the options (quantitative analysis)**	N/A (it is a Light Impact Assessment)		

5. Comparison of options and preferred option

5.1.	**Effectiveness criterion (options' response to specific objectives)**	Based on the findings from section 4.1, we assessed the extent to which the various options respond to the specific objectives, from 1-very low response to 5-very high response (**effectiveness**).

	Option 0 (baseline)	*Option 1*
Reduce the number of Infrastructure Related National Technical Rules impacting vehicle design and operation	N/A (no closure of existing Open Points)	4 (as 3 existing Open Points are completely closed, 2 partly closed)
Overall score		4
Effectiveness (average score)	N/A	4

5.2.	**Efficiency (NPV and B/C ratio) criterion**	N/A (LIA)
5.3.	**Summary of the comparison**	N/A (one option only)
5.4.	**Preferred option(s)**	N/A (Option 1 – Amendment of the TSI)
5.5.	**Further work required**	Further deeper impact assessment is needed to completely close the Open Point related to Appendix E and F of INF TSI dealing with capability requirements for structures to withstand loads from multiple units (Problem 1 will be partly solved by this amendment of the INF TSI)

6. Monitoring and evaluation

6.1.	**Monitoring indicators**	No specific monitoring activities required for this specific amendment.
6.2.	**Future evaluations**	Ex Post Evaluations in relation to the INF TSI in general