
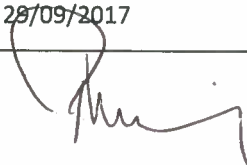
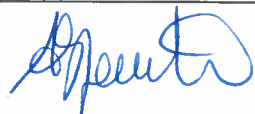


Making the railway system
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REPORT N. ERA-REC-120-1-REP OF THE EUROPEAN UNION AGENCY FOR RAILWAYS

on

TSI LOC&PAS Limited revision 2015

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1. Introduction

1.1. Background to the assignment

According to its Work Programme 2015 - Activity 02.01 'Harmonized EU rules for vehicles (including all structural TSIs)', the European Union Agency for Railways has performed a limited revision of the LOC&PAS TSI (Regulation (EU) 1302/2014).

The main reason for this revision is the need to review and update the TSIs in order to close open points and take account of developments in technology and social requirements.

This revision has been performed in two steps:

- A first step, which started in July 2014, and which resulted in the recommendation ERA-REC-120, issued in January 2016 and
- A second step to close open points interfaced with fixed installations and cover other remaining issues, which are documented in this report. This will result in the recommendation ERA-REC-120-1 complementing the recommendation above and aligned with the recommendations ERA-REC-127 and ERA-REC-114 revising the INF and ENE TSIs respectively.

1.2. Contents of this report

This report complements the accompanying report ERA-REC-120-REP issued in January 2016 for the following subjects:

- Improvement of the TSI text taking into account EN Standards
- Closure of the open points on:
 - Ballast pick-up,
 - Eddy current track brake and
 - Interface protocols between EMS and DCS and transferred data format of the Energy meter system.
- Additional optional clause on vehicles for general operation

The corresponding draft recommendation ERA-REC-120-1 (draft TSI amendment) is available in the Annex 1 of this report; the final recommendation will be issued to the Commission at a later stage, considering the entry into force of the 4th Railway Package.

2. Workgroups

2.1. Composition of the working party

According to Article 3.1 of the Agency Regulation 'The Agency shall ensure that its working parties are competent and representative and that they include adequate representation of those sectors of the industry and of those users which will be affected by measures which might be proposed by the Commission on the basis of the recommendation addressed to it by the Agency. The work of the working parties shall be transparent.'

As the recommendation presented in this report is a complement of the recommendation ERA-REC-120, the composition of the working party has remained unaltered.

Seven representative bodies (RB) and eleven national safety authorities (NSA) participated in the additional 3 WP meetings held so far to cover the topics described in section 1.2.

2.2. Working party meetings participation

Table 1 : Working Party meetings participants

<i>Invited RB/NSA</i>	<i>Meeting N°6 26/01/2016</i>	<i>Meeting N°7 02/06/2016</i>	<i>Meeting N°8 10/09/2016</i>
ALE			
CER	Y	Y	Y
EPTTOLA	Y	Y	Y
ETF	Y		
EIM	Y	Y	Y
NB-RAIL	Y	Y	Y
UITP			
UNIFE	Y	Y	Y
OTIF	Y		Y
NSA Austria	Y		Y
NSA Belgium	Y		Y
NSA Croatia			
NSA Denmark	Y	Y	
NSA Spain	Y	Y	Y
NSA Finland	Y	Y	
NSA Estonia			
NSA France	Y	Y	Y
NSA Germany	Y	Y	Y
NSA Hungary			
NSA Ireland			
NSA Italy			
NSA Luxembourg			
NSA Norway	Y	Y	Y
NSA Poland			
NSA Romania	Y	Y	
NSA Slovenia			
NSA Sweden	Y	Y	Y
NSA Latvia			
NSA UK	Y	Y	Y

3. Working methods

Extranet workspace of the project was established at:

<https://extranet.era.europa.eu/Interop/TSI-LOC-PAS/SitePages/Home.aspx>

This workspace gathers all documents of the project and is accessible to members of the working party and their deputies as well as to all experts involved in other working parties organised by the Agency.

4. Main aspects covered

The main aspects covered by the working party are described in the sections below; the corresponding draft amendments to the TSIs are provided in annex 1.

4.1. Improvement of the TSI text taking into account EN Standards

The proposed amendments allow a simplification of the TSI and a better consistency with EN standards. They are described below.

Taking into account the incoming publication by end of 2016 of an EN standard (based on prEN 16839:2015), the WP agreed in referring to this standard, rewording the clause 4.2.2.3 (b) (Requirements on 'Manual' coupling system) and deleting the Appendix A.

The TSI already makes in its clause 4.2.4.3 (Type of braking system) reference to the standard EN 14198:2004. This reference has been updated with the last version available of the standard planned to be published in 2016.

The clauses 4.2.11.6 (Special requirements for stabling of trains) and 4.2.12.2 (General documentation) have been reviewed by adding a reference to the EU documents TS 50534 and IEC 61375 in order to describe electric interface (power supply) and communication protocols.

4.2. Closure of open points

The situation regarding the open points is thoroughly explained in point 5.1 of the report ERA-REC-120-REP. This report explains the additional progress in the closure of the 3 open points below:

4.2.1. Ballast pick-up (Clause 4.2.6.2.5 Aerodynamic effect on ballasted tracks)

This open point is also present in TSI INF. It applies for rolling stock of speed equal or higher than 190 km/h. The preliminary work is explained in detail in point 5.1.5 of the report ERA-REP-120. Main findings of this work are:

- ✓ It is adequate to limit this requirement for rolling stock with a maximum speed higher than 250 km/h (instead of 190 km/h).
- ✓ Design requirements on the INF side only would not be effective and should be combined with maintenance requirements and aerodynamic characteristics of the underframe of the rolling stock.
- ✓ Most of the issues related to ballast pick-up involve inadequate track maintenance.

The working party activity during this second step resulted in the following actions:

- ✓ The ongoing work made by CEN was taken into consideration; consistency with TSIs has been ensured by issuing a Requirement for a Standard (RfS 52) in order to define assessment methods and clear pass-fail criteria for the rolling stock at any speed.
- ✓ Taking into account the work of the WP INF to close the equivalent open point in the TSI INF (see report ERA-REC-127 REP, point 7.2.9), a proposal was drafted in order to limit the impact of the open point. The new TSI text
 - Is limited for vehicles with a maximum speed higher than 250 km/h (instead of 190 km/h),
 - For vehicles of a maximum speed between 250 km/h and 300 km/h which have an identical underside geometry and relevant equipment as those of a train already operated on

ballasted tracks of the European network at the same or higher speed, the requirement is deemed to be fulfilled via a transitional clause until the full closure of the open point, and

- The requirement remains an open point for units of maximum design speed higher than 300 km/h or units with a maximum design speed lower than 300 km/h which do not fulfil the point above.

4.2.2. *Eddy current track brake (Clause 4.2.8.3 of the TSI)*

The requirements regarding the conditions of use of eddy current track brake (regarding their effect on rail heating and vertical force) are an open point in the LOC&PAS TSI. This open point is also present in the TSI INF.

The Working Party discussed a proposal from the Agency in order to close this open point based on the results of the ECUC (Eddy-CUrrrent brake Compatibility) research project.

The main outcome from the discussions were that this system has a very limited real use and it is not feasible to establish a limit of the temperature increase in the rail because it depends on particular conditions of the track and its operation (frequency of trains, environmental temperatures, etc)

Taking into account the work of the WP INF to close the equivalent open point in the TSI INF (see report ERA-REC-127 REP, point 7.2.1), the WP agreed that it is not possible to define harmonised requirements; the use of this system should be managed at an operational level by the Railway Undertaking RU and IM and the conditions of use of the track should be included in RINF.

4.2.3. *On-board energy measurement system – ground communication interface protocols and transferred data format.*

The requirements related to interface protocols between the on-board energy measuring system (EMS) and and the on-ground data collection system (DCS) and related to the transferred data format were declared as open points in the clause 4.2.17 of ENE TSI (Reg. 1301/2014/EU) and in the clause 4.2.8.2.8 and Appendix D of LOC & PAS TSI.

The work performed in order to close these open points is documented in the Report ERA-REC-114-REP “Closure of open points in ENE TSI (Reg. 1301/2014/EU) and LOC&PAS TSI (Reg. 1302/2014/EU) related to interface protocols between EMS and DCS and transferred data format”.

4.3. Additional optional clause on vehicles for general operation

Under OTIF regulation APTU Art.11 § 2a, the UTP LOC&PAS, which entered into force on 1.1.2015, takes precedence over the former RIC technical provisions for passenger coaches used in international traffic. The UTP/TSI includes new specifications for functions which were not previously covered by RIC, such as the signals for the passenger alarm, and call for aid device.

Following a proposal from OTIF supported by CER, in order to facilitate the coupling in a train of coaches UTP/TSI compliant, including their coupling with coaches RIC compliant, specific optional provisions to be verified during the conformity assessment of the vehicle against UTP/TSI were proposed and analysed. According to the UTP/TSI, these coaches are intended for general operation (units intended to be coupled with other units(s) in a train formation which is not defined at design stage).

In February 2014 the first joint workshop between the Agency, the European Commission, OTIF and concerned Representative Bodies was held to discuss this subject; an agreement was found in the final workshop organised in November 2015.

The conclusion of these works was that although clause 6.2.7 of the LOC&PAS TSI on assessment of units intended to be used in general operation already cover the requirements at a general level, it seems convenient to complement this clause with more precise, optional requirements set out in the new clause *'6.2.7a Additional optional requirements for units intended to be used in general operation'* covering the main relevant mechanical and electrical interfaces between vehicles.

In case this clause is applied on initiative of the Applicant, the appointed notified body has to assess the compliance to the additional requirements/conditions specified within the EC verification procedure; this shall be reported in the certificate and in the technical documentation of the vehicle. At operating level, the Railway Undertaking can then use this information in its procedure for train composition.

5. Impact assessment

The closure of open points has been shown to have clear financial benefits to the railway sector through the introduction of single harmonised procedures and the removal of the need to refer to each Member States National Technical Rules.

The clause 6.2.7a 'Additional optional requirements for units intended to be used in general operation' is of voluntary application, and has been requested by some stakeholders (e.g. CER) without sustained opposition from other WP members. Therefore, the benefit for these stakeholders is obvious and a formal impact assessment has not been carried out.

6. Conclusions and next steps

The TSI amendments proposed in this report complement those already submitted in the recommendation ERA-REC-120 issued in January 2016 and close the activity related to the 'TSI LOC&PAS limited revision' in the work programmes 2015 and 2016 of the Agency.

The TSIs will enter into a new revision cycle in order to align their contents with the recast Interoperability Directive (EU) 2016/797 and fulfil the requirements set out in the Commission Delegated Decision (EU) 2017/1474 of 8 June 2017.

