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Railway Interoperability and Safety Committee

Working document

Draft Commission Decision amending Commission Decisions 2006/861/EC, 2008/163/EC, 2008/164/EC, 2008/217/EC, 2008/231/EC, 2008/232/EC, 2008/284/EC, 2011/229/EU, 2011/274/EU, 2011/275/EU, 2011/291/EU and 2011/314/EU

This document is submitted for opinion to the Committee established in accordance with Article 29(1) of Directive 2008/57/EC. It is based on the recommendations of the European Railway Agency ERA/REC/04-2011/INT of 31 March 2011, ERA/REC/08-2011/INT-ERTMS of 20 July 2011 and ERA/REC/07-2011/INT of 8 September 2011.

COMMISSION DECISION

of XXX

amending Commission Decisions 2006/861/EC, 2008/163/EC, 2008/164/EC, 2008/217/EC, 2008/231/EC, 2008/232/EC, 2008/284/EC, 2011/229/EU, 2011/274/EU, 2011/275/EU, 2011/291/EU and 2011/314/EU concerning technical specifications for interoperability

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community¹, and in particular Article 6(1) thereof,

Whereas:

- (1) Article 12 of Regulation (EC) No 881/2004 of the European Parliament and of the Council of 29 April 2004 establishing a European railway agency² requires the European Railway Agency (hereinafter referred to as ‘the Agency’) to ensure that the technical specifications for interoperability (hereinafter referred to as ‘TSIs’) are adapted to technical progress and market trends and to the social requirements and to propose to the Commission the amendments to the TSIs which it considers necessary.
- (2) By Decision C(2007)3371 of 13 July 2007, the Commission gave a framework mandate to the Agency to perform certain activities under Council Directive 96/48/EC of 23 July 1996 on the interoperability of the trans-European high-speed rail system³ and Directive 2001/16/EC of the European Parliament and of the Council of 19 March 2001 on the interoperability of the trans-European conventional rail system⁴. Under the terms of that framework mandate, the Agency was requested to revise the TSIs on high-speed rolling stock, freight wagons, locomotives and passenger rolling stock, noise, infrastructure, energy, control-command and signalling, operation and traffic management, telematic applications for freight and passenger services, safety on railway tunnels and accessibility to persons with reduced mobility.
- (3) On 31 March 2011, the Agency issued a recommendation on the specification of the register of infrastructure, the procedure of demonstrating the level of compliance with

¹ OJ L 191, 18.7.2008, p.1

² OJ L 164, 21.6.2004, p. 1.

³ OJ L 235, 17.9.1996, p. 6.

⁴ OJ L 110, 20.4.2001, p. 1.

the basic parameters of the TSIs for existing lines, and subsequent amendments to TSIs (ERA/REC/04-2011/INT).

- (4) On 9 June 2011, the Committee established in accordance with Article 29(1) of Directive 2008/57/EC gave a positive opinion on the draft Commission implementing Decision on the European register of authorised types of railway vehicles and on the draft Commission implementing Decision on the common specifications of the register of railway infrastructure. Following the adoption of the two Commission acts based on these drafts, namely Commission implementing Decision 2011/633/EU of 15/9/2011 on the common specifications of the register of railway infrastructure⁵ and Commission implementing Decision 2011/XXX/EU of XXXX on the European register of authorised types of railway vehicles⁶, the relevant TSIs need to be updated to ensure global consistency.
- (5) Appendix A of the current TSIs on Operation and Traffic Management refer to version 1 of European Railway Traffic Management System (ERTMS) operating rules that were developed on the basis of European Train Control System (ETCS) System Requirements Specifications (SRS) version 2.2.2.
- (6) ETCS SRS have reached a stable version 2.3.0.d. This needs to be reflected by updated ERTMS operating rules in the TSIs on operation and traffic management, for both conventional rail and high-speed.
- (7) On 20 July 2011, the Agency issued a recommendation on revised ERTMS operational principles and rules" in TSIs on Operation and Traffic management for conventional rail and high-speed rail (ERA/REC/08-2011/INT-ERTMS).
- (8) On 8 September 2011, the Agency issued a recommendation on further amendments to TSIs to correct errors and deficiencies (ERA/REC/07-2011/INT).
- (9) For practical reasons, it is preferable to amend a series of TSIs by a single Commission Decision to implement particular corrections and updates in the legal texts. These corrections and updates are not arising from a global revision of the TSIs or from the extension of their geographical scope.
- (10) It is therefore necessary to amend the following Decisions:
 - Commission Decision 2006/861/EC of 28 July 2006 concerning the technical specification of interoperability relating to the subsystem rolling stock — freight wagons of the trans-European conventional rail system⁷;
 - Commission Decision 2008/163/EC of 20 December 2007 concerning the technical specification of interoperability relating to safety in railway tunnels in the trans-European conventional and high-speed rail system⁸;

⁵ OJ L 256, 1.10.2011, p. 1

⁶ OJ L XX, XXXXX, p. XX

⁷ OJ L 344, 8.12.2006, p.1

⁸ OJ L 64, 7.3.2008, p.1

- Commission Decision 2008/164/EC of 21 December 2007 concerning the technical specification of interoperability relating to persons with reduced mobility in the trans-European conventional and high-speed rail system⁹;
- Commission Decision 2008/217/EC of 20 December 2007 concerning a technical specification for interoperability relating to the infrastructure subsystem of the trans-European high-speed rail system¹⁰;
- Commission Decision 2008/231/EC of 1 February 2008 concerning the technical specification of interoperability relating to the operation subsystem of the trans-European high-speed rail system adopted referred to in Article 6(1) of Council Directive 96/48/EC and repealing Commission Decision 2002/734/EC of 30 May 2002¹¹;
- Commission Decision 2008/232/EC of 21 February 2008 concerning a technical specification for interoperability relating to the rolling stock subsystem of the trans-European high-speed rail system¹²;
- Commission Decision 2008/284/EC of 6 March 2008 concerning a technical specification for interoperability relating to the energy sub-system of the trans-European high-speed rail system¹³;
- Commission Decision 2011/229/EU of 4 April 2011 concerning the technical specifications of interoperability relating to the subsystem ‘rolling stock – noise’ of the trans-European conventional rail system¹⁴;
- Commission Decision 2011/274/EU of 26 April 2011 concerning a technical specification for interoperability relating to the ‘energy’ subsystem of the trans-European conventional rail system¹⁵;
- Commission Decision 2011/275/EU of 26 April 2011 concerning a technical specification for interoperability relating to the ‘infrastructure’ subsystem of the trans-European conventional rail system¹⁶;
- Commission Decision 2011/291/EU of 26 April 2011 concerning a technical specification for interoperability relating to the rolling stock subsystem — ‘Locomotives and passenger rolling stock’ of the trans-European conventional rail system¹⁷;

⁹ OJ L 64, 7.3.2008, p.72
¹⁰ OJ L 77, 19.3.2008, p.1
¹¹ OJ L 84, 26.3.2008, p.1
¹² OJ L 84, 26.3.2008, p.132
¹³ OJ L 104, 14.4.2008, p.1
¹⁴ OJ L 99, 13.4.2011, p.1
¹⁵ OJ L 126, 14.5.2011, p.1
¹⁶ OJ L 126, 14.5.2011, p.53
¹⁷ OJ L 139, 26.5.2011, p.88

- Commission Decision 2011/314/EU of 12 May 2011 concerning the technical specification for interoperability relating to the ‘operation and traffic management’ subsystem of the trans-European conventional rail system ¹⁸;

(11) The measures provided for in this Decision are in conformity with the opinion of the Committee established in accordance with Article 29(1) of Directive 2008/57/EC,

HAS ADOPTED THIS DECISION:

Article 1

The Annex to Decision 2006/861/EC is amended in accordance with Annex I to this Decision.

Article 2

The Annex to Decision 2008/163/EC is amended in accordance with Annex II to this Decision.

Article 3

The Annex to Decision 2008/164/EC is amended in accordance with Annex III to this Decision.

Article 4

The Annex to Decision 2008/217/EC is amended in accordance with Annex IV to this Decision.

Article 5

The Annex to Decision 2008/231/EC is amended in accordance with Annex V to this Decision.

Article 6

The Annex to Decision 2008/232/EC is amended in accordance with Annex VI to this Decision.

Article 7

The Annex to Decision 2008/284/EC is amended in accordance with Annex VII to this Decision.

¹⁸ OJ L 144, 31.5.2011, p.1

Article 8

The Annex to Decision 2011/229/EU is amended in accordance with Annex VIII to this Decision.

Article 9

The Annex to Decision 2011/274/EU is amended in accordance with Annex IX to this Decision.

Article 10

The Annex to Decision 2011/275/EU is amended in accordance with Annex X to this Decision.

Article 11

The Annex to Decision 2011/291/EU is amended in accordance with Annex XI to this Decision.

Article 12

The Annex to Decision 2011/314/EU is amended in accordance with Annex XII to this Decision.

Article 13

This Decision shall apply from [six months after the date of notification].

Article 14

This Decision is addressed to the Member States.

Done at Brussels,

For the Commission
Siim KALLAS
Vice-President

Annex I

The Annex to Decision 2006/861/EC (WAG TSI) is amended as follows:

- (1) In Clause 3.4.3 “TECHNICAL COMPATIBILITY”, sixth paragraph, the tenth indent is deleted
- (2) Clause 4.2.3.2 is replaced by the following:

“4.2.3.2 Static axle load, mass per unit length and geometrical characteristics of axle spacing

The permissible payload that a wagon may carry, for lines up to 25t, shall be determined by application of clauses 6.1 and 6.2 of EN 15528:2008. For the train detection systems characteristics additional requirements are imposed on wagons (see CCS TSI Annex A, Appendix 1)”.
- (3) In Clause 4.2.4.1.2.2 “Braking Performance elements”, sub-clause “Brake mass percentage” , the second paragraph is replaced by the following:

“The method of determining the brake mass/brake mass percentage shall remain applicable in addition to the method of deceleration profiles; the manufacturer shall supply these values”.
- (4) In Clause 4.2.4.1.2.8 “Parking Brake”, the eleventh paragraph is replaced by the following:

“The minimum parking brake performance, considering no wind, shall be determined by calculations as defined in clause 6 of EN 14531-6:2009. The minimum performance of the parking brake shall be marked on the unit. The marking shall comply with EN 15877-1:2010 (clause 4.5.25)”.
- (5) In Clause 4.2.6.1.1 “General”, the third paragraph is deleted.
- (6) In Clause 4.2.8 “MAINTENANCE: MAINTENANCE FILE”, the fifth paragraph is deleted.
- (7) In Clause 4.2.8.1.2 “Management of the Maintenance File”, the first indent is deleted
- (8) Clause 4.3.2.1 is replaced by the following:

“4.3.2.1 Static axle load, mass per unit length and geometrical characteristics of axle spacing (section 4.2.3.2)

Section 4.2.3.2 of the present TSI specifies the mass per unit length and geometrical characteristics of axle spacing, including, requirements imposed on wagons (see CCS TSI Annex A, Appendix 1) for the train detection systems characteristics”.
- (9) In Clause 4.3.3.9 “Environmental Conditions”, the first paragraph is replaced by the following:

“When a limit of the climatic conditions defined in section 4.2.6.1.2 of this TSI is exceeded, the system is in a degraded mode. In this case operational restrictions shall be considered and information given to the Railway Undertaking or train driver”.

- (10) The title of Clause 4.3.5.4 is replaced by the following:

"4.3.5.4 Static axle load, mass per unit length and geometrical characteristics of axle spacing"

- (11) Section 4.8 is replaced by the following:

“4.8 Register of infrastructure and European register of authorised typed of vehicles

The data to be provided for the register provided for in Articles 34 of Directive 2008/57/EC are those indicated in Commission implementing Decision **2011/XXX/EU of XXXX** on the European register of authorised types of railway vehicles¹⁹

- (12) In Section 7.6 “PLACING IN SERVICE OF WAGONS”, the fifth paragraph is replaced by the following:

“However, it must be verified that the wagons are operated on compatible infrastructures”.

- (13) In Annex C, Section C.4 “GA, GB, GC VEHICLE GAUGES”, the second paragraph is replaced by the following:

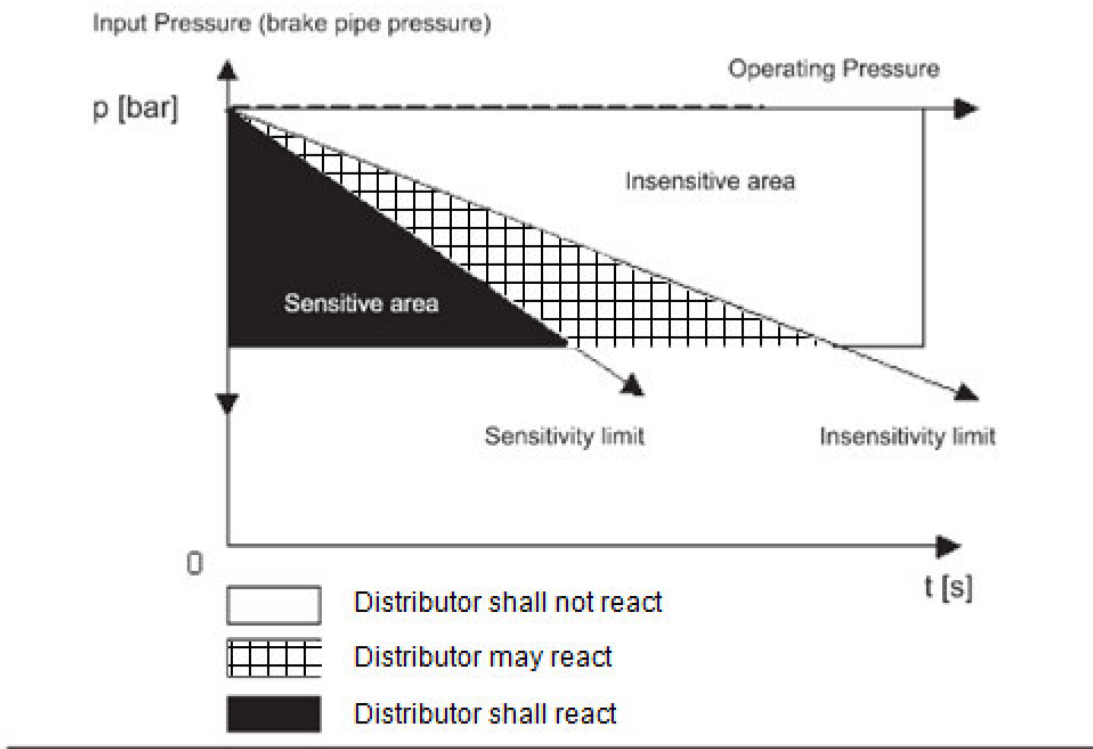
“Loads and vehicles conforming to enlarged gauges GA, GB or GC shall only be allowed on lines widened to these gauges. All GA, GB and GC movements on lines not shown on this list shall be treated as special consignments”.

- (14) Annex D is deleted.

- (15) Annex H is deleted.

¹⁹ **OJ L XX, XXXXX, p. XX**

(16) In Annex I, Figure I.5 is replaced by the following:



(17) In Annex P, Table P.3 is amended as follows:

- (a) The text in the fourth row “First stroke in percent of the maximum brake shoe pressure for ‘goods’ brake”, last column “Limit Value” is replaced by the following:

“Passenger Setting: Up to 10 seconds

Goods Setting: Up to 40 seconds”.

- (b) The text in the sixth row “Release time of a train after a full application” from the top of the table, last column “Limit Value” is replaced by the following:

“Passenger Setting: Up to 25 seconds

Goods Setting: Up to 60 seconds”.

(18) In Annex Q, Table Q.1 is amended as follows:

- (a) In the text in the fifth column “In service experience (Module V)”, the fifth row from the bottom “Brake pad and disk” is replaced by the following:

“12 Month”.

- (b) In the text in the fifth column “In service experience (Module V)”, the fourth row from the bottom “Brake blocks” is replaced by the following:
- “12 Month”.
- (19) In Annex T, Section T.1.1 “Introduction” , the first paragraph is replaced by the following:
- “The following freight wagon gauges are available on lines in Great Britain: W6, W7, W8 and W9. The gauges are described below in Section A –W6, Section B — Sample Calculation, Section C —W7 and W8, Section D —W9. Application of these gauges is limited to vehicles whose lateral suspension movement and sway is minimal. Vehicles with soft lateral suspension and/or large sway shall be evaluated dynamically according to Notified National Standards”.
- (20) In Annex V,
- Section V.2 is amended as follows:
- (a) the first paragraph is replaced by the following:
- “Freight wagons operating in the UK shall have the equivalent brake force and, if applicable, any brake force factors calculated. Freight wagons operating in member states other than the UK shall have the brake weight/braked weight percentage calculated. Freight wagons required to operate in the UK and other member states shall have both equivalent brake force/brake force factors and brake weight/braked weight percentage calculated”.
- (b) in the subchapter "Calculation of Brake Force Data", point ii) is deleted.
- (21) Annex AA is amended as follows:
- (a) Section Module SD is amended as follows:
- (i) in Subsection 4.2, second paragraph, the sixth indent is deleted.
- (ii) in Subsection 10, the ninth indent is deleted.
- (b) Section Module SF (Product Verification) is amended as follows:
- (i) in Subsection 5, second paragraph, the third indent is deleted.
- (ii) in Subsection 10, the second indent is deleted.
- (c) in Section Module SH2 (Full Quality Management System with Design Examination), Subsection 10, the eight indent is deleted.
- (22) Annex FF is amended as follows:
- (a) Table FF 2.1 is amended as follows:
- (i) Note (g) is replaced by the following:

“Standard functions up to a maximum of 14 l brake cylinder volume or control volume (dummy volume)”.

(ii) Note (k) is replaced by the following:

“SW 4/3 — with the C3W cut-off valve, filling of control and auxiliary reservoirs has to take almost identical times”.

(b) Table FF 2.2 is amended as follows

(i) The text in the last column “Compressed-air brake”, 9th row from the bottom “Oerlikon/ ESH 100” is replaced by the following:

“G/P brake with non-universal action where the connected brake cylinder or pre-adjusted volumes are up to 14 l”.

(ii) Note (b) is replaced by the following:

“SW 4C — controlled filling of control reservoir with protection against overcharge when brake is released”.

(iii) Note (d) is replaced by the following:

“Distributor choke should be adapted in stages to the vehicle's auxiliary reservoir volumes”.

(c) In Table FF 3, the fourth and fifth rows from the bottom are replaced by the following:

| | | |
|------|------------------------------------|----------|
| DAKO | Load-proportional valve SL1 or SL2 | DAKO-DSS |
| DAKO | Load-proportional valve SL1 or SL2 | DAKO-DS |

(d) In Table FF 8, the sixth row (PKP) is replaced by the following:

| | |
|------|--------|
| CNTK | Warsaw |
|------|--------|

(23) Annex KK is deleted.

Annex II

The Annex to Decision 2008/163/EC (SRT TSI) is amended as follows:

- (1) The title “DRAFT TECHNICAL SPECIFICATION FOR INTEROPERABILITY” is replaced by the following:

“TECHNICAL SPECIFICATION FOR INTEROPERABILITY”.

- (2) In Clause 4.2.4.1 “Hot axle box detectors”, the second paragraph is replaced by the following:

“The IM shall designate line-side hot axle box detectors and their location. The RU shall include information about these in the Route Book”.

- (3) Clause 4.2.5.9 is replaced by the following:

“4.2.5.9. Emergency lighting system in the train

The provisions in clause 4.2.7.12 ‘Emergency lighting’ of HS RST TSI apply also to CR passenger rolling stock, except that an autonomy of 90 minutes after the main energy supply has failed is required.”

- (4) In Clause 4.3.2 “Interfaces with the Infrastructure subsystem”, the header of the first column in the table is replaced by “SRT TSI”.

- (5) Clause 4.3.2.1. is replaced by the following:

“4.3.2.1. Escape walkways

The definition of escape walkways is described in section 4.2.2.7 of the present TSI.”

- (6) In Clause 4.3.3 “Interfaces with the Energy subsystem”, the header of the first column in the table is replaced by “SRT TSI”.

- (7) In Clause 4.3.4 “Interfaces with the Control-Command-Signalling subsystem”, the header of the first column in the table is replaced by “SRT TSI”.

- (8) In Clause 4.3.5 “Interfaces with the Traffic Management and Operation subsystem”, the header of the first column in the table is replaced by “SRT TSI”.

- (9) Clause 4.3.6. “Interfaces with the rolling stock subsystem” is amended as follows:

- (a) The header of the first column in the table is replaced by “SRT TSI”.

- (b) Rows 9 and 10 of the table are replaced by following:

| | | |
|---|--------------|--|
| “4.2.5.9 Emergency lighting system in the train” | “4.2.7.12” | |
| “4.2.5.10 Switching off of air conditioning in the train” | “4.2.7.11.1” | |

- (10) In Clause 4.3.7 “Interfaces with the PRM subsystem”, the header of the first column in the table is replaced by “SRT TSI”.

(11) Section 4.8 is replaced by the following:

“4.8 Register of infrastructure and European register of authorised types of vehicles

The data to be provided for the registers provided for in Articles 34 and 35 of Directive 2008/57/EC are those indicated in Commission implementing Decision 2011/633/EU of 15 September 2011 on the common specifications of the register of railway infrastructure²⁰ and Commission implementing Decision 2011/XXX/EU of XXXX on the European register of authorised types of railway vehicles²¹”.

(12) In Clause 6.2.1 “Conformity assessment (general)”, the text “CR SRT TSI” in all the rows, in the second column of the table, is replaced by “SRT TSI”.

(13) Annex A is deleted.

(14) Annex B is deleted.

(15) Annex F is amended as follows:

(a) in Section F.3.1 Module SB (Type-examination), Subsection 3, sixth paragraph, the second indent is replaced by the following:

“The European register of authorised types of vehicle, including all information as specified in the TSI”.

(b) Section F.3.2 Module SD (Production Quality Management System) is amended as follows:

(i) in Subsection 4.1, third paragraph, the sixth indent is replaced by the following:

“The Register of Infrastructure, including all information as specified in the TSI”.

(ii) in Subsection 10, the ninth indent is replaced by the following:

“The Register of Infrastructure, including all information as specified in the TSI”.

(c) Section F.3.3 Module SF (Product Verification) is amended as follows:

(i) in Subsection 5, second paragraph, the third indent is replaced by the following:

“The Register of Infrastructure, including all information as specified in the TSI”.

²⁰ OJ L 256, 1.10.2011, p. 1

²¹ OJ L XX, XXXXX, p. XX

- (ii) in Subsection 10, the second indent is replaced by the following:

“The Register of Infrastructure”, including all information as specified in the TSI”.
- (d) Section F.3.4 Module SG (Unit Verification) is amended as follows:
 - (i) in Subsection 3, second paragraph, the second indent is replaced by the following:

“The Register of Infrastructure, including all information as specified in the TSI”.
 - (ii) in Subsection 8, the eighth indent is replaced by the following:

“The Register of Infrastructure, including all information as specified in the TSI”.
- (e) Section F.3.5 Module SH2 (Full quality management system with design examination) is amended as follows:
 - (i) in Subsection 4.2, second subparagraph, second indent, the fifth sub-indent is replaced by the following:

“The Register of Infrastructure or the European register of authorised types of vehicle, including all information as specified in the TSI”.
 - (ii) in Subsection 10, the eighth indent is replaced by the following:

“The Register of Infrastructure, including all information as specified in the TSI”.

Annex III

The Annex to Decision 2008/164/EC (PRM TSI) is amended as follows:

- (16) Clause 4.1.2.18.1 is replaced by the following:

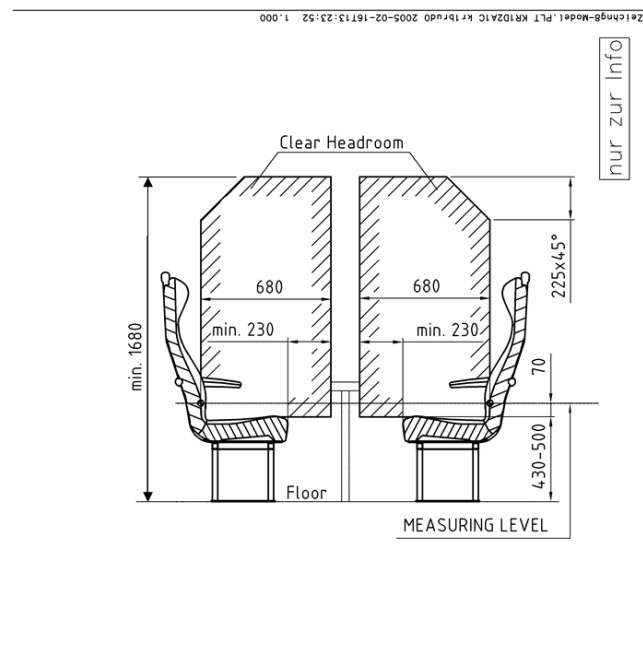
“For platforms on the High Speed network where trains complying with the High-Speed Rolling Stock TSI are intended to stop in normal commercial operation, values are set in the HS INS TSI (clause 4.2.20.4).

For platforms on the High Speed network where no train complying with the High-Speed Rolling Stock TSI is intended to stop in normal commercial operation and for platforms on the Conventional Rail Network, two nominal values are permissible for platform height: 550mm and 760mm above the running surface. The tolerances of these dimensions shall be within $-35\text{mm}/+0\text{mm}$.

For platforms on the Conventional Rail Network where tramways (e.g. Stadtbahn or Tram-Train) are intended to stop, a nominal height of platform between 300 mm and 380 mm is permitted. The tolerances on these dimensions shall be within ± 20 mm.

In curves with a radius of less than 500 m, it is permitted for the platform height to be greater or less than those specified provided that the first useable step of the vehicle complies with figure 11 in clause 4.2.2.12.1”

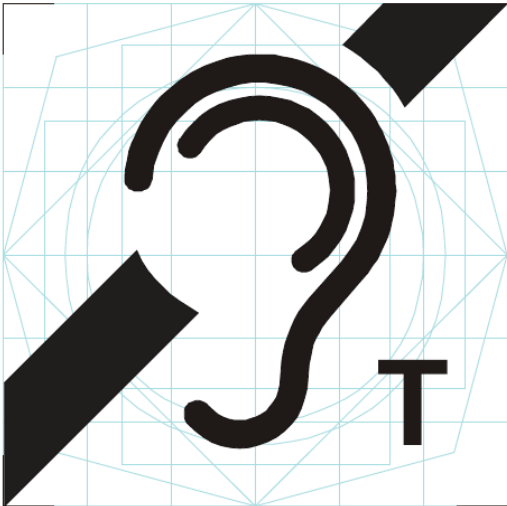
- (17) In Clause 4.2.2.2.1 “Priority seats. General”, figure 3 is replaced by the following:



- (18) In Clause 7.3.2 “Rolling Stock”, the third paragraph is replaced by the following:

“This TSI does not apply to Rolling Stock being renewed or upgraded under the terms of a contract already signed or under final phase of tendering procedure at the date of entry into force of this TSI.”

(19) In Annex N “PRM Signage”, figure 1 is replaced by the following:



Annex IV

The Annex to Decision 2008/217/EC (HS INF TSI) is amended as follows:

- (1) In Section 2.1 “Definition of the infrastructure domain” the second paragraph is replaced by the following:

“The infrastructure structural subsystem of the trans-European high-speed rail system includes the tracks and switches and crossings of the high-speed lines within the scope set out in Chapter 1”.

- (2) In Clause 4.2.1 “General provisions” the ninth paragraph is replaced by the following:

“The performance levels of high-speed trains can also be enhanced by adopting specific systems, such as vehicle body tilting. Special conditions are permitted for running such trains, provided they do not entail restrictions for high-speed trains not equipped with tilting”.

- (3) In Clause 4.2.3 “Minimum infrastructure gauge” the third paragraph is deleted.

- (4) In Clause 4.2.8.1 “Cant deficiency on plain track and on the through route of switches and crossings” note (a) is deleted.

- (5) Clause 4.2.9.2 “Design values” is amended as follows:

- (a) The first paragraph is replaced by the following:

“Design values of track gauge, rail head profile and rail inclination for plain line shall be selected to ensure that the equivalent conicity limits set out in Table 1 are not exceeded when the following wheelsets are modelled passing over the designed track conditions (simulated by calculation according to EN 15302:2008+A1:2010).

- S 1002 as defined in EN 13715:2006+A1:2010 with SR = 1 420 mm
- S 1002 as defined in EN 13715:2006+A1:2010 with SR = 1 426 mm
- GV 1/40 as defined in EN 13715:2006+A1:2010 with SR = 1 420 mm
- GV 1/40 as defined in EN 13715:2006+A1:2010 with SR = 1 426 mm”

- (b) Table 1 is replaced by the following:

| Speed range (km/h) | Equivalent conicity limit values |
|--------------------|----------------------------------|
| $v \leq 160$ | Assessment not required |
| $160 < v \leq 280$ | 0.20 |
| $v > 280$ | 0.10 |

- (6) In Clause 4.2.9.3.1 “Minimum values of mean track gauge”, the table is replaced by the following:

| Speed range (km/h) | Minimum value of mean track gauge (mm) over 100 m in service |
|--------------------|--|
| $v \leq 200$ | 1430 |
| $200 < v \leq 230$ | 1432 |
| $230 < v \leq 250$ | 1433 |
| $v > 250$ | 1434 |

- (7) In Clause 4.2.11 “Rail inclination”, point a) “Plain line”, the second paragraph is replaced by the following:

“The rail inclination for a given route shall be selected from the range 1/20 to 1/40”.

- (8) In Clause 4.2.13.1 “Lines of category I”, subsection “Longitudinal loads” “longitudinal forces due to interaction between structures and track”, the last paragraph is deleted.

- (9) Clause 4.2.14.1 is replaced by the following:

“4.2.14.1. Vertical loads

Structures shall be designed to support vertical loads in accordance with the following load models, defined in EN 1991-2:2003:

- (a) Load model 71, as set out in EN 1991-2:2003 paragraph 6.3.2(2)P
- (b) Load model SW/0 for continuous bridges, as set out in EN 1991-2:2003 paragraph 6.3.3(3)P

The load models shall be multiplied by the factor alpha (α) as set out in EN 1991-2:2003 paragraphs 6.3.2(3)P and 6.3.3(5)P. The value of α shall be equal to or greater than 1.

The load effects from the load models shall be enhanced by the dynamic factor phi (Φ) as set out in EN 1991-2:2003 paragraphs 6.4.3(1)P and 6.4.5.2(2).

The maximum vertical deflection of a bridge deck shall not exceed the values set out in paragraph A2.4.4.2.3(1) of Annex A2 of EN 1990:2002 + EN 1990:2002/A1:2005.”

- (10) In Clause 4.2.14.2 “Dynamic analysis”, the third paragraph is replaced by the following:

“The maximum permitted peak design values of bridge deck acceleration calculated along the line of a track shall not exceed the values set out in paragraph A2.4.4.2.1(4)P of Annex A2 of EN 1990:2002 + EN 1990:2002/A1:2005. The design of bridges shall take into account the most unfavourable effects of either the vertical

loads specified in § 4.2.14.1 or load model HSLM, in accordance with EN 1991-2:2003 paragraph 6.4.6.5(3).”

- (11) Clause 4.2.14.4 is replaced by the following:

“4.2.14.4 Nosing forces

The nosing force shall be taken into account in the design of structures as set out in EN 1991-2:2003 paragraphs 6.5.2 (2)P and (3). It shall be applied on both straight track and curved track.”

- (12) In Clause 4.2.14.5 “Actions due to traction and braking (longitudinal loads)”, the first paragraph is replaced by the following:

“Traction and braking forces shall be taken into account in the design of structures as set out in EN 1991-2:2003 paragraphs 6.5.3 (2)P, (4), (5) and (6). The direction of the traction and braking forces shall take account of the permitted directions of travel on each track.”

- (13) In Clause 4.2.18 “Electrical characteristics”, the second paragraph is deleted.

- (14) In Clause 4.2.23.1 “Lateral space alongside tracks” the second paragraph is replaced by the following:

“On lines of Category II and III, a similar lateral space shall be provided at all locations where this provision is reasonably practicable. Where a space cannot be provided, Railway Undertakings shall be informed of this specific situation”.

- (15) In Clause 4.7 “Health and safety conditions”, the third paragraph is replaced by the following:

“Staff engaged in the maintenance of the high-speed infrastructure subsystem, when working on or near the track, shall wear reflective clothes, which bear the EC mark”.

- (16) Clause 4.8 is replaced by the following:

“4.8 Register of infrastructure and European register of authorised typed of vehicles

The data to be provided for the register provided for in Article 35 of Directive 2008/57/EC are those indicated in Commission implementing Decision 2011/633/EU of 15 September 2011 on the common specifications of the register of railway infrastructure”.

- (17) In Clause 5.3.1.1 ‘Railhead profile’ , points (a) and (b) are replaced by the following:

“(a) Plain Line

The railhead profile shall be selected from the range set out in EN 13674-1:2011 Annex A.

(b) Switches and crossings:

The railhead profile shall be selected from the range set out in Annex A of EN 13674-1:2011 and in Annex A of EN 13674-2:2006+A1:2010.”

- (18) Clause 5.3.1.3 is replaced by the following:

“5.3.1.3. Steel grade

- (a) Plain line

The steel grade of the rail shall comply with EN 13674-1:2011 Chapter 5.

- (b) Switches and crossings

The steel grade of the rail shall comply with EN 13674-2:2006+A1:2010 Chapter 5”.

- (19) In Clause 5.3.2 “The rail fastening systems”, point (d) is deleted.

- (20) In Clause 6.1.6.2 “Assessment of fastening system”, the second indent is deleted.

- (21) In Clause 7.3.5 “Particular features on the Finnish network”, the table in the subsection “Equivalent conicity” is replaced by the following:

| Speed range (km/h) | Minimum value of mean track gauge over 100 m (mm) |
|--------------------|---|
| $v \leq 160$ | Assessment not required |
| $160 < v \leq 200$ | 1519 |
| $200 < v \leq 230$ | 1521 |
| $230 < v \leq 250$ | 1522 |
| $v > 250$ | 1523 |

- (22) In Clause 7.3.6.2, Section “Platforms (section 4.2.20)”, sub-section “Minimum platform length”, the second paragraph is deleted.

- (23) Annex A is amended as follows:

- (a) in Table A1, row “5.3.2.d Electrical resistance” is deleted.

- (b) in Table A2, row “4.2.18 Electrical characteristics” is deleted.

- (24) In Annex B1, in Table B1, row “4.2.18 Electrical characteristics” is deleted.

- (25) In Annex C, the chapter title: ‘Module A: Internal Design Control with Production Verification’ is replaced by the chapter title: ‘Module A1: Internal Design Control with Production Verification’.

- (26) Annex D is deleted.

- (27) Annex F is deleted.
- (28) In Annex H, the fourth line is deleted.

Annex V

The Annex to Decision 2008/231/EC (HS OPE TSI) is amended as follows:

Annex A is replaced by the following:

“ANNEX A

ERTMS/ETCS and ERTMS/GSM-R operating rules

This Annex contains the ERTMS operational principles and rules as they appear in version 2 (document published on the European Railway Agency Internet site www.era.europa.eu).

Annex VI

The Annex to Decision 2008/232/EC (HS RST TSI) is amended as follows:

- (1) In Clause 3.4.3 “Technical Compatibility”, Sub-section "Essential requirement 2.4.3. paragraph 3", second subparagraph, the eighteenth indent is deleted.
- (2) In Section 3.7 “Elements of the rolling stock subsystem related to the essential requirements”, the last row 'Infrastructure and rolling stock register' of the table 'is deleted.
- (3) In Section 4.1 “Introduction” the second paragraph is replaced by the following sentence:

“The common characteristics of rolling stock subsystem are defined in section 4 of this TSI”.
- (4) In Clause 4.2.2.5, the second paragraph is deleted.
- (5) In Clause 4.2.3.1, the third paragraph is replaced by the following:

“The type or design examination certificate of ‘EC’ verification of the rolling stock shall indicate the assessed gauge”.
- (6) In Clause 4.2.3.3.2.1 “Class 1 trains”, the seventh paragraph is replaced by the following:

“When, for vehicles with independent rotating wheels, inhibition of false alarms by using the train identification number is not possible, priority shall be given to the on-board detection system provided that all bearings of the wheels are monitored”.
- (7) In Clause 4.2.3.3.2.3.2 “Functional requirements for the vehicle” , the third paragraph is replaced by the following:

“As an alternative to this requirement on alarm trigger levels, it is permissible by mutual agreement between the infrastructure-manager and the railway undertaking to identify trains by train identification systems and use specific alarm trigger levels as agreed, that are different from the above levels.”
- (8) In Clause 4.2.3.4.3 “Track loading limit values”, point (b) “Longitudinal load”, the fourth paragraph is replaced by the following:

“case 2: for other braking cases, such as a normal service braking for speed reduction or non repetitive braking to a halt, or repetitive braking for speed control, the use of the brake and the maximum braking force allowed shall be determined by the infrastructure manager for each line concerned. Any limitations on the braking force defined in clause 4.2.4.5 shall be justified and taken into account in the operating rules”.
- (9) In Clause 4.2.3.4.5 “Design for vehicle stability” , the third paragraph is replaced by the following:

“The range of values of speed and conicity for which the vehicle is designed to be stable shall be specified and certified”.

- (10) In Clause 4.2.3.4.7 “Design values for wheel profiles”, in table 4, the text in the column “rail head profile” for rows of “test condition No” 5 and 6 is replaced by the following:

“rail section 60 E 2 defined in EN 13674-1:2003/A1:2007”.

- (11) Clause 4.2.3.7 is replaced by the following:

“4.2.3.7 Minimum curve radius

This parameter is an interface with the high-speed infrastructure subsystem in that the minimum curvatures to be taken into account are defined on one hand for the high-speed tracks (based on the cant deficiency) and on the other hand for the stabling tracks. Reference shall be made to clauses 4.2.6 and 4.2.24.3 of the High-Speed Infrastructure TSI 2006”.

- (12) In Clause 4.2.4.5 “Eddy current brakes”, the third paragraph is replaced by the following:

“For emergency braking on all lines except specific connecting lines”.

- (13) In Clause 4.2.4.5 “Eddy current brakes”, second paragraph, the second indent is replaced by the following:

“For full or normal service braking on the sections on the sections of the line where the infrastructure manager permits it”.

- (14) Clause 4.2.6.1 is replaced by the following:

“4.2.6.1 Environmental conditions

The rolling stock and all its constituent parts shall meet the requirements of this TSI within the climatic zones T1, or T2, or T3 as specified in EN50125-1:1999 in which it is intended to run”.

- (15) In Clause 4.2.6.2.2 “Aerodynamic loads on passengers on a platform”, sub-section “Test conditions”, second paragraph, the second sentence is replaced by the following:

“If the assessment is successful for a platform height of 240 mm or lower, the train shall be deemed to be acceptable for all lines”.

- (16) In Clause 4.2.7.2.2. “Measures to prevent fire”, the fourth paragraph is replaced by the following:

“The conformity requirements are addressed in Clause 7.1.7”.

- (17) In Clause 4.2.7.4.2.1 “Horns – General”, the following text is added after point (d) :

“or

(e) Two separately sounded warning horns. The fundamental frequencies of the warning horn notes shall be:

high note: 660 Hz ± 30 Hz

low note: 370 Hz ± 20 Hz”

- (18) In Clause 4.2.7.4.2.5 “Horns – Interoperability constituent requirements”, the following text is added :

“or

660 Hz ± 30 Hz”

- (19) In Clause 4.2.8.3.6.1 “Pantograph contact force”, point (b) “Adjustment of pantograph mean contact force and integration into the Rolling Stock Sub-System”, the fifth paragraph is deleted.

- (20) In Clause 4.2.10.1 “Responsibilities”, the fifth paragraph is deleted.

- (21) In Clause 4.2.10.2.2 “The Maintenance Documentation” first paragraph , the fourth indent is replaced by the following:

“Safety/interoperability-relevant limits: For the safety/interoperability relevant components or parts according to this TSI, this document shall give the measurable limits not to be exceeded in service (to include operation in degraded mode)”.

- (22) In Clause 4.2.10.3 “Management of the maintenance file”, fourth paragraph, the first indent is deleted.

- (23) In Clause 4.2.10.4 “Management of the maintenance information”, the first indent is deleted.

- (24) Section 4.8 is replaced by the following:

“4.8 Register of infrastructure and European register of authorised typed of vehicles

The data to be provided for the register provided for in Article 34 of Directive 2008/57/EC are those indicated in Commission implementing Decision 2011/XXX/EU of XXXX on the European register of authorised types of railway vehicles²²”.

- (25) Clause 7.1.3 is replaced by the following :

“7.1.3 Newly built rolling stock of an existing design not certified to the previous version (2002) of the HS RST TSI

For newly built rolling stock of an existing design, in case of class 2 rolling stock, which was not in the scope of the previous (2002) version of the HS RST TSI, it is permitted, during a transitional period of 4 years starting at the date of application of

²²

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the present TSI (i.e. 1 September 2008), to authorise such rolling stock to be placed in service without application of the present HS RST TSI. In this case, the notified national rules shall apply. After the end of the transitional period of 4 years, an assessment of conformity to the present HS RST TSI shall be performed to allow the concerned newly built rolling stock to be placed in service.

An existing design as mentioned in clauses 7.1.2 and 7.1.3. is a particular design which has already been used to produce a type of rolling stock, which has already been authorized to be placed into service in a Member State before the date of application of the present TSI.”

- (26) Clause 7.1.8.2 is replaced by the following :

“7.1.8.2 Future agreements

Any future agreement or modification of existing agreements, in particular those which include the procurement of rolling stock whose design is not certified in accordance with the TSIs, shall take into account EU legislation and this TSI. Member States shall notify the Commission of such agreements/modifications. The same procedure as set out in clause 7.1.8.1 then applies”.

- (27) In Clause 7.3.2.7 “Hot axle box detection for Class 2 trains [clause 4.2.3.3.2.3]”, sub-section “Functional requirements for the vehicle” is replaced by the following:

“Functional requirements for the vehicle

Mutual agreement between the infrastructure-manager and the railway undertaking is requested to identify trains by train identification systems and use of specific alarm trigger levels”.

- (28) In Clause 7.3.2.10. “Maximum train length [4.2.3.5]” , sub-section “Specific case for Great Britain” is replaced by the following :

“Specific case for Great Britain

Category ‘P’- permanent

The High Speed Infrastructure TSI 2006 contains a specific case for the British network requiring platforms on upgraded lines to have a usable length of at least 300m. The length of high speed trains intended for operation on the British network shall be compatible with the length of the platforms at which they are intended to stop”.

- (29) In Clause 7.3.2.19. “Pantograph [4.2.8.3.6]” the, sub-section “Specific case for trains running on Great Britain network” is replaced by the following :

“Specific case for trains running on Great Britain network

Category ‘P’- permanent

For lines in Categories II and III, pantograph heads shall not have insulated horns, unless permitted for specific routes.

For lines in Categories II and III, the conducting range of the pantograph head shall be 1 300mm.

Pantographs shall have a working range of 2,1 m.

Pantograph heads shall have a maximum along track width of 400 mm”.

- (30) In Clause 7.3.2.19. “Pantograph [4.2.8.3.6]”, sub-section “Specific case for trains running on the Spanish network” , sub-sub-section “The Pantograph Envelope”, the second paragraph is replaced by the following :

“At all speeds up to line speed; maximum cant; maximum wind speed at which unrestricted operation is possible, and extreme wind speed:”

- (31) Annex F is amended as follows:

- (a) In Section F.3.1 Module SB (Type-examination), Subsection 3, sixth paragraph, the second indent is replaced by the following:

“the European register of authorised types of vehicle, including all information as specified in the TSI”.

- (b) Section F.3.2. Module SD Production Quality Management System is amended as follows:

(i) in Subsection 4.2, second paragraph, the fourth indent is deleted.

(ii) in Subsection 10, the ninth indent is deleted.

- (c) Section F.3.3. Module SF Product Verification is amended as follows

(i) in Subsection 5, second paragraph, the third indent is deleted.

(ii) in Subsection 10, the second indent is deleted.

- (d) Section F.3.4 Module SH2 (Full quality management system with design examination) is amended as follows:

(i) in Subsection 4.2, second paragraph, the seventh indent is replaced by the following:

“The European register of authorised types of vehicle, including all information as specified in the TSI”.

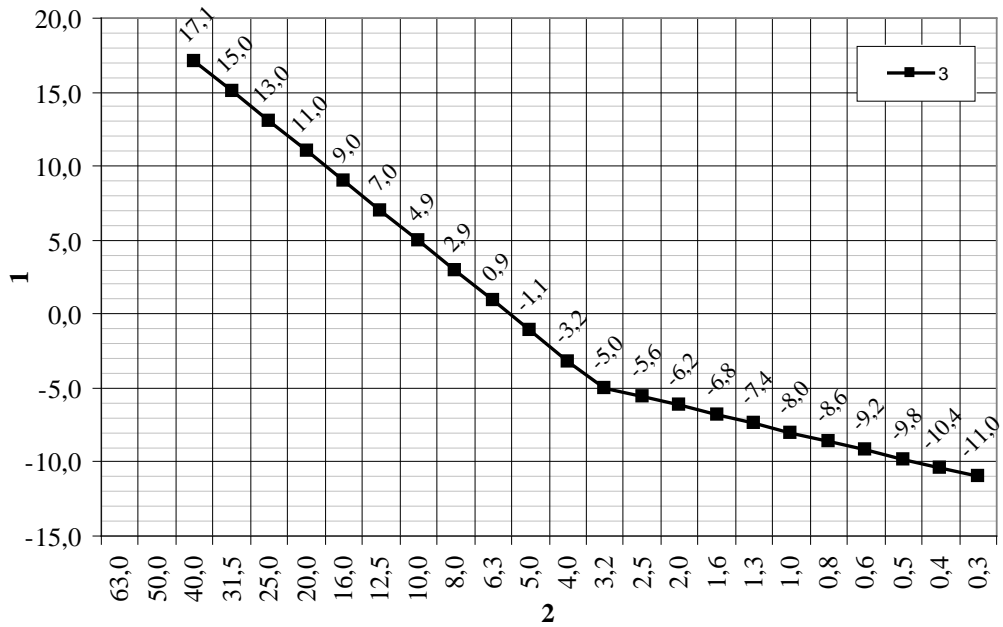
(ii) in Subsection 10, the eighth indent is deleted.

- (32) Annex I is deleted.

(33) In Annex N, figure N1 is replaced by the following:

“Figure N1

Rail acoustic roughness limit spectrum of the reference track



Key

- 1 1/3 octave band roughness level, dB
- 2 Wavelength, cm”
- 3 1/3 octave band roughness level, dB

(34) In Annex P, part P.1. “Introduction”, the first paragraph is replaced by the following:

“This annex describes the procedure that shall be followed to determine the deceleration a_i (m/s²) for the speed range $[v_{i-1}, v_i]$ in the degraded conditions of case B in table 6 of clause 4.2.4.1 of this TSI and the corresponding maximum stopping distances in Table 7 of clause 4.2.4.1 of this TSI”.

Annex VII

The Annex to Decision 2008/284/EC (HS ENE TSI) is amended as follows:

- (1) In Clause 4.2.2 “Voltage and frequency”, the second paragraph is replaced by the following:

“The voltage and frequency at the terminals of the substation and at the pantograph shall comply with EN 50163:2004, clause 4. Conformity shall be demonstrated by means of a design review”.
- (2) In clause 4.2.3, “System performance and installed power” second paragraph , the second sentence is replaced by the following:

“The Energy subsystem design shall assure the ability of the power supply to achieve the specified performance”.
- (3) In clause 4.2.4 “Regenerative braking” , the second paragraph of is replaced by the following:

“DC power supply systems are not required to be designed to permit the use of regenerative braking as a service brake”.
- (4) In Clause 4.2.6 “External electromagnetic compatibility”, the first paragraph is replaced by the following:

“External electromagnetic compatibility is not a specific characteristic of the trans-European high-speed rail network. Energy supply installations shall comply with EN 50121-2:2006 to meet all requirements concerning electromagnetic compatibility”.
- (5) In Clause 4.2.9.2 “Geometry of overhead contact line”, the fourth paragraph is deleted.
- (6) In Clause 4.2.10 “Compliance of the overhead contact line system with infrastructure gauge” the first paragraph is replaced by the following:

“The design of the overhead contact line system shall comply with the infrastructure gauges defined in clause 4.2.3 of the High Speed Infrastructure TSI. Overhead contact line design shall comply with the kinematic envelope of the vehicles”.
- (7) In Clause 4.2.15 “Mean contact force” the fifth paragraph is replaced by the following:

“New lines may additionally permit the use of Pantographs following C1 or C2 curves. Existing lines may require the use of pantographs following curves C1 or C2”.
- (8) In Clause 4.2.20 “Current capacity, DC systems, trains at standstill”, the fifth paragraph is replaced by:

“Conformity assessment shall be carried out in accordance with EN 50367:2006, Annex A.4.1”.

- (9) Clause 4.2.21 “Phase separation sections” is amended as follows:
- (a) the second paragraph is replaced by the following:

“Adequate means shall be provided to allow a train that is stopped within the phase separation section to be restarted. The neutral section shall be connectable to the adjacent sections by remotely controlled disconnectors”.
 - (b) in sub-clause “Lines of category II and III”:
 - (i) the second paragraph is replaced by the following

“For category II and III lines, separation sections as specified for category I lines or a design according to Figure 4.2.21 may be adopted. In the case of Figure 4.2.21, the centre section shall be connected to the current return path, the neutral sections (*d*) may be formed by neutral section insulators and the dimensions shall be as follows:”
 - (ii) the fifth paragraph is deleted.
- (10) In Clause 4.2.22.1 the third paragraph is replaced by the following:

“The neighbouring Infrastructure Managers shall agree either point (a) or point (b) according to the prevailing circumstances”.
- (11) In Clause 4.2.23 “Electrical Protection Coordination Arrangements” the first paragraph is replaced by the following:

“Electrical protection coordination design of the Energy subsystem shall comply with the requirements detailed in EN 50388:2005, clause 11”.
- (12) Clause 4.2.25 is replaced by the following:

“4.2.25 Harmonics and Dynamic Effects

The High Speed Energy subsystem shall withstand overvoltages generated by rolling stock harmonics up to the limits stated in EN 50388:2005 clause 10.4 for AC supply. Conformity assessment shall consist of a compatibility study that demonstrates that the subsystem element can withstand harmonics up to the defined limits according to EN 50388:2005, clause 10. Conformity assessment shall be conducted according to EN 50388:2005 clause 10”.
- (13) Section 4.8 is replaced by the following:

“4.8 Register of infrastructure and European register of authorised typed of vehicles

The data to be provided for the register provided for in Article 35 of Directive 2008/57/EC are those indicated in Commission implementing Decision 2011/633/EU

of 15 September 2011 on the common specifications of the register of railway infrastructure²³”.

(14) In Clause 6.2.2.1 “General”, the first paragraph is replaced by the following:

“For the assessment procedure of the Energy subsystem the Contracting Entity or its authorised representative established within the Union may choose either:

- the unit verification procedure (module SG) indicated in Annex A.3 to this TSI, or
- the full quality management system with design examination procedure (module SH2) indicated in Annex A.3 to this TSI.”

(15) Annex D is deleted.

(16) Annex E is deleted.

²³ OJ L 256, 1.10.2011, p. 1

Annex VIII

In the Annex to Decision 2011/229/EU (CR Noise TSI) Clause 4.8.2 is replaced by the following:

“4.8.2. Rolling stock register

The data to be provided for the register provided for in Articles 34 of Directive 2008/57/EC are those indicated in Commission implementing Decision 2011/XXX/EU of XXXX on the European register of authorised types of railway vehicles²⁴”.

²⁴

OJ L XX, XXXXX, p. XX

Annex IX

The Annex to Decision 2011/274/EU (CR ENE TSI) is amended as follows:

- (1) In Clause 4.1 “Introduction”, the third paragraph is replaced by the following:
“Taking account of all the applicable essential requirements, the energy subsystem is characterised by the specifications set out in clauses 4.2 to 4.7”.
- (2) In Clause 4.2.3 “Voltage and frequency”, the fourth paragraph is deleted.
- (3) In Clause 4.2.4.1 “Maximum train current”, the first paragraph is deleted.
- (4) In Clause 4.2.6 “Current capacity, DC systems, trains at standstill”, the third paragraph is deleted.
- (5) In Clause 4.2.7 “Regenerative braking”, the third paragraph is deleted.
- (6) In Clause 4.2.13.1 “Contact wire height”, the fifth paragraph is deleted.
- (7) In Clause 4.2.13.3 “Lateral deviation”, the fourth paragraph is deleted.
- (8) In Clause 4.2.17 “Pantograph spacing”, the last paragraph (text after table 4.2.17) is deleted.
- (9) In Clause 4.2.18 “Contact wire material”, the third paragraph is replaced by the following:
“For AC lines the contact wire shall be designed to permit the use of plain carbon contact strips (CR LOC&PAS TSI clause 4.2.8.2.9.4.2).”
- (10) In Clause 4.2.19 “Phase separation sections”, the fourth paragraph is deleted.
- (11) In Clause 4.2.20.1 “General”, the third paragraph is replaced by the following:
“The neighbouring Infrastructure Managers shall agree either (a) or (b) according to the prevailing circumstances.”
- (12) In Clause 4.2.20.2 “Pantographs raised”, the second paragraph is deleted.
- (13) Clauses 4.4.2.1 and 4.4.2.2. are replaced by the following:
“4.4.2.1. Management of power supply under normal conditions

Under normal conditions in order to conform to clause 4.2.4.1, the maximum permissible train current shall not exceed the value contained in the Register of Infrastructure.

4.4.2.2 Management of power supply under abnormal conditions:

Under abnormal conditions the maximum permissible train current can be lower. The Infrastructure Manager shall give notice of the variation to the Railway Undertakings”.

(14) Clause 4.8 ” is replaced by the following:

“4.8 Register of infrastructure and European register of authorised typed of vehicles

The data to be provided for the register provided for in Article 35 of Directive 2008/57/EC are those indicated in Commission implementing Decision 2011/633/EU of 15 September 2011 on the common specifications of the register of railway infrastructure²⁵”.

(15) In Clause 7.4.1 “Introduction”, the fifth paragraph is replaced by the following:

“An existing subsystem may allow the circulation of TSI-conform vehicles whilst meeting the essential requirements of Directive 2008/57/EC. The infrastructure manager should be able in this case, on a voluntary basis, to demonstrate compliance of the existing subsystem with the basic parameters of this TSI”

(16) Clause 7.4.4 is replaced by the following:

“7.4.4. Existing subsystem that are not subject to a renewal or upgrading project

A subsystem in current operation may permit trains conforming to the requirements of the HS and CR rolling stock TSIs to operate whilst meeting the essential requirements”.

(17) Annex C is deleted.

(18) Annex D is deleted.

²⁵ OJ L 256, 1.10.2011, p. 1

Annex X

The Annex to Decision 2011/275/EU (CR INF TSI) is amended as follows:

- (1) In section 4.2.1 “TSI categories of line”, point (4) is deleted
- (2) In section 4.2.2 “Performance parameters”, points (6), (7) and (8) are deleted
- (3) Section 4.2.3.2 “Requirements for basic parameters” is amended as follows:
 - (a) Point (6) is replaced by the following:

“(6) A short section of track with devices to allow transition between different nominal track gauges is permitted”
 - (b) Point (8) is replaced by the following:

“(8) The performance levels of conventional trains can be enhanced by adopting specific systems, such as vehicle body tilting. Special conditions are permitted for running such trains, provided they do not entail restrictions for other trains not equipped with such systems”.
- (4) In section 4.2.4.2 “Distance between track centres”, point (3) is deleted.
- (5) In section 4.2.4.4 “Minimum radius of horizontal curve”, point (5) is deleted.
- (6) In section 4.2.5.1 “Nominal track gauge”, point (2) is deleted.
- (7) In section 4.2.5.2 “Cant”, point (2) is deleted.
- (8) In section 4.2.5.7.1 “Plain line”, point (3) is deleted.
- (9) Section 4.2.7.2.2 “Compatibility with braking systems” is amended as follows:
 - (a) Point (2) is deleted.
 - (b) Point (3) is replaced by the following:

“Where the track is compatible with the use of braking systems independent of adhesion conditions local climatic conditions and the expected number of repeated brake applications at a given location shall be taken into account. Braking systems independent of wheel-rail adhesion conditions include magnetic track brakes and eddy current track brakes.”
- (10) In section 4.2.10.1 “Usable length of platforms”, point (3) is deleted.
- (11) In section 4.2.12.1 “Distance markers”, point (2) is deleted.
- (12) In section 4.2.13.1 “General”, point (2) is deleted.
- (13) Section 4.8 is replaced by the following:

“4.8 Register of infrastructure and European register of authorised typed of vehicles

The data to be provided for the register provided for in Article 35 of Directive 2008/57/EC are those indicated in Commission implementing Decision 2011/633/EU of 15 September 2011 on the common specifications of the register of railway infrastructure²⁶”.

- (14) In section 5.3.1.1 “Railhead profile”, point (2) is deleted.
- (15) In section 6.1.4.2 “EC declaration of conformity for the rail”, point (1) is deleted.
- (16) Section 6.5 “Assessment of Register of Infrastructure” is deleted.
- (17) Section 7.3.4 “Existing lines that are not subject to a renewal or upgrading project” is amended as follows:
 - (a) Point (1) is replaced by the following:

“An existing subsystem may allow the circulation of TSI-conform vehicles whist meeting the essential requirements of Directive 2008/57/EC. The infrastructure manager should be able in this case, on a voluntary basis, to demonstrate compliance of the existing subsystem with the basic parameters of this TSI”
 - (b) Point (2) is deleted.
- (18) In section 7.6.3.1 “Performance parameters (4.2.2)”, point (6) is deleted.
- (19) In section 7.6.10.1 “Structure gauge (4.2.4.1)”, point (4) is deleted.
- (20) Annex D is deleted.

²⁶ OJ L 256, 1.10.2011, p. 1

Annex XI

The Annex to Decision 2011/291/EU (CR Loc&Pas TSI) is amended as follows:

- (1) In Clause 4.1.1 “General”, the fifth paragraph is deleted.
- (2) In Clause 4.2.2.2.3 “End coupling”, Subclause (a) “End coupling — General”, first paragraph, the second indent is deleted.
- (3) In Clause 4.2.2.10 “Load conditions and weighted mass”, the seventh paragraph is deleted.
- (4) In Clause 4.2.3.1 “Gauging”, the sixth and seventh paragraphs are deleted.
- (5) In Clause 4.2.3.3.1 “Rolling stock characteristics for the compatibility with train detection systems”, the second paragraph is deleted.
- (6) In Clause 4.2.4.5.2. “Emergency braking”, subclause “Calculation of the deceleration” the sixth paragraph (i.e. “for each load condition... of this TSI”) is deleted.
- (7) Clause 4.2.4.5.4 “Calculations related to thermal capacity” is amended as follows:
 - (a) The seventh paragraph is deleted.
 - (b) The eighth paragraph is replaced by the following:

“The following ‘reference case’ for the slope to be considered is suggested: maintain the speed of 80 km/h on a slope of 21 ‰ constant gradient over a distance of 46 km”.
- (8) In Clause 4.2.4.5.5 “Parking brake”, the third paragraph is replaced by the following:

“The unit (train or vehicle) parking brake performance shall be calculated as defined in the standard EN14531-6:2009”.
- (9) In Clause 4.2.5.9 “Internal air quality”, second paragraph, second indent, the second subparagraph is replaced by the following:

“If this emergency provision is ensured through battery supplied forced ventilation, measurements shall be performed in order to define the duration in which the CO₂ level will remain below 10 000 ppm, assuming a passenger load derived from the load condition ‘design mass under normal payload’. The duration shall not be less than 30 minutes”.
- (10) In Clause 4.2.6.1 “Environmental conditions”, the sixth paragraph is deleted.
- (11) In Clause 4.2.6.1.1 “Altitude”, the second paragraph is deleted.
- (12) In Clause 4.2.6.1.2 “Temperature”, the second paragraph is deleted.
- (13) In Clause 4.2.6.1.5 “Snow, ice and hail”, the sixth t paragraph is deleted.

- (14) In Clause 4.2.8.1.2 “Requirements on performance”, the fifth paragraph is deleted.
- (15) In Clause 4.2.8.2.2 “Operation within the range of voltages and frequencies”, the third paragraph is deleted.
- (16) In Clause 4.2.8.2.4 “Maximum power and current from the overhead contact line”, the third paragraph is deleted.
- (17) In Clause 4.2.8.2.5 “Maximum current at standstill for DC systems”, the second paragraph is replaced by the following:
“Limit values are specified in clause 4.2.6 of the CR energy TSI”.
- (18) In Clause 4.2.8.2.8 “Energy consumption measuring function”, the third paragraph is deleted.
- (19) In Clause 4.2.8.2.9.2 “PANTOGRAPH HEAD GEOMETRY (IC LEVEL)”, the second paragraph is deleted.
- (20) In Clause 4.2.10.1 “General and categorisation”, the fourth paragraph is deleted.
- (21) Clause 4.8 is replaced by the following:

“4.8 Register of infrastructure and European register of authorised typed of vehicles

The data to be provided for the register provided for in Article 34 of Directive 2008/57/EC are those indicated in Commission implementing Decision **2011/XXX/EU of XXXX** on the European register of authorised types of railway vehicles²⁷”.

²⁷

OJ L XX, XXXXX, p. XX

Annex XII

In the Annex to Decision 2011/314/EU (CR OPE TSI), Appendix A is replaced by the following:

“This Appendix contains the ERTMS operational principles and rules as they appear in version 2 (document published on the European Railway Agency Internet site www.era.europa.eu).”