EUROPEAN UNION AGENCY FOR RAILWAYS

Making the railway system work better for society.

OPINION

OPI 2019-2

OF THE EUROPEAN UNION AGENCY FOR RAILWAYS

for

THE EUROPEAN COMMISSION

regarding

FR request for new specific cases in INF and ENE TSIs

1. General context

1.1. In its letter Ref. Ares(2019)1269671 - 25/02/2019, the European Commission asked the Agency to provide an opinion regarding the French authorities request, related to Commission Regulations (EU) N° 1299/2014[1] (INF TSI) and (EU) N° 1301/2014[2] (ENE TSI). The request concerns several new specific cases proposed to be introduced in the above-mentioned TSIs.

1.2. The new specific cases requested, relate to the requirements regarding cant, cant deficiency, the immediate action limit for cant, alignment and longitudinal level and the immediate action limits of track gauge as an isolated defect set out in INF TSI as well as requirements regarding minimum height of the overhead contact line set out in ENE TSI applicable in case of renewal and upgrading.

1.3. In the request, French authorities underline that those new specific cases would not impact interoperability and the application of TSIs requirements in case of renewal and upgrading, would entail very high costs and could lead to a reduction of the current authorised maximum speed and thus to a reduction of the performance of the network.

1.4. Under these circumstances, the Agency is asked by the European Commission to provide an opinion on the submitted request in order to assess its adequacy with the objectives of Directive (EU) 2016/797[3] in particular as regards interoperability and the compliance with essential requirements.

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[1] Commission Regulation (EU) No 1299/2014 of 18 November 2014 on the technical specifications for interoperability relating to the 'infrastructure' subsystem of the rail system in the Union, OJ L 356, 12.12.2014, p. 1–109; and subsequent amendments.

[2] Commission Regulation (EU) No 1301/2014 of 18 November 2014 on the technical specifications for interoperability relating to the 'energy' subsystem of the rail system in the Union, OJ L 356, 12.12.2014, p. 179–227; and subsequent amendments.

[3] Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union, OJ L 138, 26.5.2016, p. 44.

2. Legal background

2.1. *The Commission based its request on Article 10 (2) and Article 19 of the Agency Regulation[4] .*

2.2. *According to Article 10 (2) of the Agency Regulation, the European Commission has the possibility to request an opinion of the Agency on amendments to any act adopted based on the Directive (EU) 2016/797. The Article 19 of the Agency Regulation defines tasks of the Agency concerning the technical support in the field of railway interoperability, among which is the issuing of the opinions, as well.*

2.3. *According to Article 19 (1)(d) of the Agency Regulation, the Agency shall issue opinions which constitute acceptable means of compliance concerning deficiencies in TSIs, in accordance with Article 6(4) of Directive (EU) 2016/797, and provide those opinions to the Commission.*

2.4. *The INF TSI and ENE TSI, were adopted based on the Directive (EU) 2016/797and therefore are in scope of the provisions of Article 10 (2) and Article 19 of the Agency Regulation, as described above.*

2.5. *Directive (EU) 2016/797 defines a 'specific case' as follows: "any part of the rail system which needs special provisions in the TSIs, either temporary or permanent, because of geographical, topographical or urban environment constraints or those affecting compatibility with the existing system, in particular railway lines and networks isolated from the rest of the Union, the loading gauge, the track gauge or space between the tracks and vehicles strictly intended for local, regional or historical use, as well as vehicles originating from or destined for third countries" (article 2(13)). Specific cases are derogations to the specification for a common target system, where due to specific circumstances, the achievement of the target system may not be feasible or requires a longer transitional period. They are described in TSIs, specifying for each of them, the implementing rules of the elements of the TSIs provided for in Article 4 of Directive (EU) 2016/797. Specific cases are to be identified by the Agency at the time of drafting a TSI (Article 5(2)(a) of Directive (EU) 2016/797). Hence adding a new specific case to a TSI requires to follow the full procedure for revising TSIs. In the absence of a specific case in a TSI, a Member State may, where justified, not apply certain parts of TSIs following the procedure of Article 7 of Directive (EU) 2016/797.*

2.6. *In the event of renewal or upgrading of existing subsystems 'fixed installations', Article 18 of Directive (EU) 2016/797 provides for a procedure where the national safety authority concerned has to decide whether a new authorisation for placing in service is needed or not. In assessing the file describing the project, the NSA has to consider the following criteria:*

(a) the overall safety level of the subsystem concerned may be adversely affected by the works envisaged;

(b) it is required by the relevant TSIs;

(c) it is required by the national implementation plans established by the Member States; or

(d) changes are made to the values of the parameters on the basis of which the authorisation was already granted.

2.7. *INF TSI applies to new railway lines in the European Union, which are placed in service from 1 January 2015. It does not apply to existing infrastructure of the rail system in the European Union, which is already placed in service on all or part of the network of any Member State on 1 January 2015, except when it is subject to renewal or upgrading in accordance with Article 18 of Directive (EU) 2016/797 and Section 7.3 of the Annex (Article 2(2) and (3) of Commission Regulation (EU) No 1299/2014).*

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[4] Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways and repealing Regulation (EC) No 881/2004, OJ L 138, 26.5.2016, p. 1.

Section 7.3.1 of INF TSI provides, for the case of upgrading or renewal of a line, that:

" (...)
(6) Where a new authorisation is required, parts of the infrastructure subsystem falling under the scope of the upgrading or renewal shall comply with this TSI and shall be subject to the procedure established in the Article 15 of Directive (EU) 2016/797, unless a permission for non-application of TSI is granted according to Article 7 of Directive (EU) 2016/797.

(7) Where a new authorisation for placing in service is not required, compliance with this TSI is recommended. Where compliance is not possible, the contracting entity shall inform the Member State of the reasons thereof."

2.8. *The ENE TSI applies to new railway lines in the European Union, which are placed in service from 1 January 2015. It does not apply to existing infrastructure of the rail system in the European Union, which is already placed in service on all or part of the network of any Member State on 1 January 2015, except when it is subject to renewal or upgrading in accordance with Article 18 of Directive (EU) 2016/797 and Section 7.3 of the Annex (Article 2(2) and (3) of Commission Regulation (EU) No 1301/2014).*

Section 7.3.1 of ENE TSI provides, for the case of upgrading or renewal of the energy subsystem part of an existing line, that:

" (...)

(b) Where a new authorisation is required, parts of the energy subsystem falling under the scope of the upgrading or renewal shall comply with this TSI and shall be subject to the procedure established in the Article 15 of Directive (EU) 2016/797, unless a permission for non-application of TSI is granted according to Article 7 of Directive (EU) 2016/797.

(c) Where a new authorisation for placing in service is required, the Contracting Entity shall define the practical measures and different phases of the project, which are necessary to achieve the required levels of performance. These project phases may include transition periods for placing equipment into service with reduced levels of performance.

(d) Where a new authorisation for placing in service is not required, compliance with this TSI is recommended. Where compliance is not possible, the contracting entity shall inform the Member State of the reasons thereof."

2.9. *Hence it is the responsibility of the NSA concerned to determine whether upgrading or renewing a line requires a new authorisation for placing in service, on the basis of the criteria listed in the above sections 2.7 and 2.8.*

2.10. *The French authorities request for new specific cases, related to the following basic parameters:*

- *In the INF TSI:*
    - *4.2.4.2. Cant;*
    - *4.2.4.3. Cant deficiency;*
    - *4.2.8.1. The immediate action limit for alignment;*
    - *4.2.8.2. The immediate action limit for longitudinal level;*
    - *4.2.8.4. The immediate action limit of track gauge as an isolated defect;*
    - *4.2.8.5. The immediate action limit for cant;*
- *In the ENE TSI:*

- *4.2.9.1. Contact wire height.*

2.11. *In accordance to section 3 of INF TSI and ENE TSI the basic parameters mentioned in 2.10 of this technical opinion, have correspondence to the essential requirements of the Directive (EU) 2016/797, as following:*

INF TSI point	*Basic parameter*	*Related Essential Requirements*			
4.2.4.2	*Cant*	*Safety*		*Technical compatibility*	*Accessibility*
4.2.4.3	*Cant deficiency*	*Safety*		*Technical compatibility*	
4.2.8.1	*The immediate action limit for alignment*	*Safety*	*Reliability Availability*		
4.2.8.2	*The immediate action limit for longitudinal level*	*Safety*	*Reliability Availability*		
4.2.8.4	*The immediate action limit of track gauge as an isolated defect*	*Safety*	*Reliability Availability*		
4.2.8.5	*The immediate action limit for cant*	*Safety*	*Reliability Availability*		

ENE TSI point	*Basic parameter*	*Related Essential Requirements*			
4.2.9.1	*Contact wire height*			*Technical compatibility*	

3. Analysis

3.1. Analysis of the request for the specific case concerning cant

3.1.1. The Table 7 of INF TSI reported below sets out the limit values for the design cant of lines, depending on the type of operation the line is intended to; i.e. if the line is intended for freight and mixed traffic or if the line is dedicated to passenger traffic:

"

Table 7

Design cant [mm]

	Freight and mixed traffic	Passenger traffic
Ballasted track	160	180
Non ballasted track	170	180

(...)"

3.1.2. The current values indicated in the INF TSI for cant are based on practical experience of European railways and represent an agreed compromise between the train performance, comfort levels and maintenance of track.

3.1.3. The French proposal of specific case, requests an increase of the limit value for the design cant for lines intended for freight and mixed traffic, as in SNCF Réseau design standard IC00272. This standard sets out 160mm as normal limit value and 180mm as exceptional.

It should be noted that the above-mentioned design standard does not distinguish between lines circulated by freight/ mixed traffic and passenger traffic.

3.1.4. As Justification for the request explained in 3.1.3. above, the following arguments are presented:

- *Decreasing the limit values for cant (i.e. decreasing from the limits established in IC00272 to the limit values as in INF TSI) leads to speed reductions, meaning lower performance;*
- *Economic viability is placed into cause in some cases of renewal or upgrading projects;*
- *Proposed limit values are already used and proved today in the FR network;*
- *Proposed limit values are compatible with rolling stock in the scope of LOC&PAS TSI[5] and WAG TSI[6].*

3.1.5. The proposed limit values for the design cant are used today in France in accordance to SNCF Réseau design standard IC00272.
It should be underlined that in this standard the application of exceptional limit value is associated to specific and strict conditions. However, the request for the specific case does not include such conditions/restrictions. In addition, the related requirements in the TSI INF do not foresee the

[5] Commission Regulation (EU) No 1302/2014 of 18 November 2014 concerning a technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem of the rail system in the European Union, OJ L 356, 12.12.2014, p. 228–393.
[6] Commission Regulation (EU) No 321/2013 of 13 March 2013 concerning the technical specification for interoperability relating to the subsystem 'rolling stock — freight wagons' of the rail system in the European Union and repealing Decision 2006/861/EC, OJ L 104, 12.4.2013, p. 1–56.

application of exceptional limit values and associated conditions/restrictions, as the values in the TSI INF (see 3.1.1. above) represent already an agreed compromise within the sector.

3.1.6. *In the event of a new authorisation for placing in service is decided by the National Safety Authority for upgrading or renewal works, the use of exceptional limit values for cant could be accepted only on a case-by-case basis according to Article 7 of Directive (EU) 2016/797. For these cases, evidences in relation to the associated specific conditions/restrictions need to be provided in order to demonstrate that the level of compliance with the related essential requirements is maintained. For this reason, the Agency is of the opinion that new specific cases should not be granted.*

3.2. Analysis of the request for the specific case concerning cant deficiency

3.2.1. *The INF TSI sets out the requirements for cant deficiency:*

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4.2.4.3. Cant deficiency

(1) The maximum values for cant deficiency are set out in Table 8.

Table 8

Maximum cant deficiency [mm]

Design speed [km/h]	$v \leq 160$	$160 < v \leq 300$	$v > 300$
For operation of rolling stock conforming to the Locomotives and Passenger TSI	153		100
For operation of rolling stock conforming to the Freight Wagons TSI	130	—	—

(2) It is permissible for trains specifically designed to travel with higher cant deficiency (for example multiple units with axle loads lower than set out in table 2; vehicles with special equipment for the negotiation of curves) to run with higher cant deficiency values, subject to a demonstration that this can be achieved safely.

(...)"

3.2.2. *The current values indicated in the INF TSI for cant deficiency are based on practical experience of European railways and represent an agreed compromise between the train performance, comfort levels and maintenance of track.*

3.2.3. *The French proposal of specific case, requests an increase of some maximum values for cant deficiency, as in SNCF Réseau design standard IC00272, section 5.3 (with category I corresponding to freight):*

"

Tableau 4 – Valeurs limites d'insuffisance de dévers en fonction des catégories de circulation

Catégorie de circulation	Valeur limite normale (en mm)	Valeur limite exceptionnelle (en mm)
Catégorie I	**110**	130
Catégorie II	**150**	160 (1)
Catégorie III	**160**	180 (2)
(1) 150 mm si V > 160 km/h (2) 160 mm si V > 200 km/h		

"

3.2.4. As Justification for the request explained in 3.2.3. above, the following arguments are presented:

- *Decreasing the limit values for cant deficiency (i.e. decreasing from the limits established in IC00272 to the limit values as in INF TSI) leads to speed reductions, meaning lower performance;*
- *Economic viability is placed into cause in some cases of renewal or upgrading projects;*
- *Proposed limit values are already used and proved today in the FR network;*
- *Proposed limit values are compatible with rolling stock in the scope of LOC&PAS TSI and WAG TSI.*

3.2.5. The proposed maximum values for the cant deficiency are used today in France in accordance to SNCF Réseau design standard IC00272.

3.2.6. It should be underlined that in this standard the application of exceptional limit value is associated to specific and strict conditions. However, the request for the specific case does not include such conditions/restrictions. In addition, the related requirements in the TSI INF do not foresee the application of exceptional limit values and associated conditions/restrictions, as the values in the TSI INF (see 3.2.1. above) represent already an agreed compromise within the sector.

3.2.7. In addition, the use of exceptional limits for cant deficiency are only acceptable for certain design of vehicles and even then, it will lead to lower comfort levels for the passengers and almost certainly higher maintenance costs.

3.2.8. In the event a new authorization for placing in service is decided by the National Safety Authority for upgrading or renewal works the use of exceptional limit values for cant deficiency could be accepted only, on a case-by-case basis according to Article 7 of Directive (EU) 2016/797. For these cases, evidences in relation to the associated specific conditions/restrictions need to be provided in order to demonstrate that the level of compliance with the related essential requirements is maintained. For this reason, the Agency is of the opinion that new specific cases should not be granted.

3.3. Analysis of the request for the specific cases concerning the immediate action limit for cant

3.3.1. *The section 4.2.8.5 of INF TSI sets out the maximum cant allowed in service of 180mm and 190mm for dedicated passenger traffic lines, which represent the immediate action limit for cant.*

3.3.2. *In accordance to Appendix S of INF TSI, Glossary, Table 48 Terms, the definition of 'Immediate Action Limits': "The value which, if exceeded, requires taking measures to reduce the risk of derailment to an acceptable level."*

3.3.3. *The French request for Specific Case underlines a different concept of design and maintenance of the cant and required actions in case of deviation from the values foreseen in the French standard IN2640: Standards for Geometry Maintenance and Track Spacing at Speed limit ≤ 220 km/h compared to the INF TSI. In particular, the limit values prescribed by the SNCF Réseau standard has not the same definition as the Immediate Action Limit values of the INF TSI.*

3.3.4. *Additionally, on the French Network, for upgrading or renewal work, the maximum permissible cant in service is limited to 15 mm more than the design cant (see IN2640: Standards for Geometry Maintenance and Track Spacing at Speed limit ≤ 220 km/h).*

The SNCF Réseau specifications are therefore out of line because the "in service cant" can reach 180 + 15 = 195mm, so as a consequence it means:

- For lines dedicated to passenger traffic, a deviation of 5mm from the INF TSI;

- For freight or mixed lines, a deviation of 15 mm from the INF TSI.

3.3.5. *It should also be noted that the above-mentioned IN2640 Standard does not distinguish between lines circulated by freight/ mixed traffic and passenger traffic.*

3.3.6. *The French request for Specific Case as it is adopted by the SNCF Réseau rule (as in 3.3.3 above) does not correspond to the TSI basic parameter: immediate action limit for cant and for this reason it is not possible to compare the values set out in the French standard IN2640 and INF TSI. The justification delivered with the request does not give evidence of how the risk of derailment is reduced to an acceptable level as stated in point 3.3.2. For this reason, the Agency is of the opinion that new specific cases should not be granted.*

3.4. Analysis of the request for the specific cases concerning immediate action limit of track gauge as an isolated defect; all related to INF TSI

3.4.1. *The Table 12 of INF TSI sets out the immediate action limits of track gauge as an isolated defect. The values are set out for minimum track gauge and maximum track gauge and are related to the speed allowed on the line:*

"

Table 12

Immediate action limits of track gauge

Speed [km/h]	Dimensions [mm]	
	Minimum track gauge	Maximum track gauge
v ≤ 120	1 426	1 470
120 < v ≤ 160	1 427	1 470
160 < v ≤ 230	1 428	1 463
v > 230	1 430	1 463

(...)"

3.4.2. *SNCF Réseau declares that on the French Network, the maintenance rules for track gauge differ from the INF TSI (see SNCF Réseau standards IN 1895 & IN 1896):*

Normes Ecartement mini maxi Voie Courante (AdV non concernés par normes STI)

	Vitesse	Ecart mini SNCF	Ecart mini Norme Européenne EN 13848-5	Ecart mini LAI STI	Ecart maxi LAI STI	Ecart maxi SNCF
VS Autres	V ≤ 30	1420	1424	1426	1470	1477
VS Matières Dangereuses	V ≤ 30	1420	1424	1426	1470	1475
VP	V ≤ 40	1420	1424	1426	1470	1472
VP 7 à 9SV sans Mat. Dangereuses	V ≤ 40	1420	1424	1426	1470	1477
VP	40 < V ≤ 120	1422	1424	1426	1470	1470
VP	120 < V ≤ 160	1422	1425	1427	1470	1470
VP	160 < V ≤ 220	1426	1428	1428	1463	1462
VP	220 < V ≤ 230	1426	1428	1428	1463	1462
LGV	V > 230	1428	1430	1430	1463	1462

Note: This analysis does not take into account the specific track gauge values in switches as the AFNOR standard (EN 13848-5:2008 +A1:2010) only deals with current track. There is a particular situation for some HSL switches (speed > 230km/h) which have been designed with a gauge of 1428. Since it is technically impossible to rectify the 2mm gap, it will be necessary to wait for the renewal of these switches to make them TSI compliant.

SNCF Réseau states that gauges below the INF TSI minimum limit may exist throughout the network. Similarly, gauges above the TSI maximum limit may also exist on secondary lines (at speeds ≤ 40 km/h) and sidings.

3.4.3. *The proposal of specific case, as described above in 3.4.2 requests less restricted values than in the INF TSI.*

3.4.4. *The SNCF Réseau "minimum gauge" lower values are justified by the use of additional restrictions, which are not included in the TSI and which cover the safety risks inherent in under-gauge:*

- *average gauge requirements, which covers in particular instability phenomena (IN 1895, IN 1896),*
- *fastening system efficiency requirements (IN1898), to guarantee against successive fasteners breakage.*

The SNCF Réseau "maximum gauge" values are based on specific fastening system efficiency requirements (Art. 4.4 and 4.6 IN 1895), applicable to gauges greater than 1472 mm, which compensate for the margins incorporated in the TSI values.

3.4.5. *SNCF Réseau states that the additional defects generated by applying the TSI instead of the SNCF Réseau to the existing network would be prohibitive. Moreover, introducing for the maintainer two typologies of existing requirements applicable simultaneously on different lines of the network (TSI/non-TSI compliant) would create a new risk in terms of organizational and human factors, particularly since this situation would persist over a very long period of time.*

3.4.6. *In order to maintain the FR values, the rail fastening systems (which is an 'interoperability constituent' according to clause 5.2 of INF TSI) need to comply with additional requirements set in SNCF Réseau standard IN1898.*

3.4.7. *The Agency is of the opinion that the additional requirements set out above on the "rail fastening systems" jeopardize the use of certified interoperability constituents, and therefore a specific case should not be granted.*

3.5. Analysis of the request for the specific cases concerning immediate action limit for alignment and immediate action limit for longitudinal defects; all related to INF TSI

3.5.1. *The INF TSI sets out the in section 4.2.8.1 the immediate action limit (as defined in 3.3.2 above) for alignment and in section 4.2.8.2 the immediate action limits for longitudinal level. In particularly:*

- *The immediate action limits for isolated defects in alignment are set out in point 8.5 of EN 13848-5:2008+A1:2010. Isolated defects shall not exceed the limits of wavelength range D1 as set out in Table 6 of the EN Standard.*
- *The immediate action limits for isolated defects in longitudinal level are set out in point 8.3 of EN 13848-5:2008+A1:2010. Isolated defects shall not exceed the limits of wavelength range D1 as set out in table 5 of the EN Standard.*

3.5.2. *The proposal of a temporary specific case is requested due to the fact that on the French Network default measurements for isolated defects in alignment and in longitudinal level have to be performed with a maintenance machine equipped with "Mauzin" filters. These filters use wavelength different from those described in the EN 13848-5: 2008 = A1:2010 Standard (domain D1).*

3.5.3. *SNCF Réseau declares that "for the domain D1, the measured defects are almost identical to those of the Mauzin domain. Moreover, as far as it is mathematically possible to transform a signal measured in the D1 domain into a signal from the Mauzin domain, the opposite is not possible".*

3.5.4. *The basic parameters related to the immediate action limits have a direct impact on the essential requirement safety. It is necessary to prove that the immediate action limit values indicated for the FR system (Mauzin) provide at least the same level of safety as the values preconized in the INF TSI (EN 13848-5).*

3.5.5. If the condition above (3.5.4) is met the FR system (Mauzin) could constitute Acceptable Means of Compliance, for the sections 4.2.8.1 (1) and 4.2.8.2 (1) of INF TSI, until the transition from the "Mauzin" measurement domain to the D1 measurement domain is concluded.

3.5.6. The Agency is of the opinion that if the condition above is met (3.5.4) the FR system (Mauzin) could constitute Acceptable Means of Compliance, for the sections 4.2.8.1 (1) and 4.2.8.2 (1) of INF TSI, until the transition from the "Mauzin" measurement domain to the D1 measurement domain is finalized.

3.6. Analysis of the request for the specific case concerning Contact Wire Height related to ENE TSI

3.6.1. *According to the Commission Regulation (EU) 1301/2014 (ENE TSI) the basic parameter 4.2.9.1 – Contact wire height contains requirements concerning the height of contact wire in the relation to speed and gauge. The table 4.2.9.1 comprises the values for nominal contact wire height, minimum design contact wire height (for a speed more than 250 km/h) and maximum design contact wire height. For speed lower than 250 km/h the minimum design contact wire height shall be calculated in accordance with EN 50119:2009, clause 5.10.5 depending on the chosen gauge.*

3.6.2. *The main reason for setting out the value for minimum contact wire height is to avoid arcing between contact wire and the earthed parts of the vehicles at any circumstances and assure current collection at the minimum working height of the pantograph. This functional requirement is important for the interoperability of the rail system.*

3.6.3. *It should be highlighted the difference between two definitions, which are set out in the abovementioned standard EN 50119: minimum contact wire height and minimum design contact wire height. If the first one is focused on the functionality to avoid the arcing between contact wire and earthed elements of the vehicle, the second is a theoretical value, designed to ensure that the minimum contact wire is always achieved. The relevant clause of the standard - 5.10.5 Minimum design contact wire height - contains parameters which should be considered by the OCL designer in the calculation.*

3.6.4. *In the French network - as in many other national railway regulations – set out in the rule IGTE 21404/004005, the minimum contact wire height is represented by the absolute value with reference to the supply voltage, vehicle gauge and polluted or not area.*

			Hauteur minimale du plan de contact en milieu de portée (m)			
		Hauteur (m) du gabarit d'encombrement statique	1500 V		25000 V	
Gabarit(s)	Utilisation		Zone sans pollution	Zone avec pollution	Zone sans pollution	Zone avec pollution
3.3; GA; GB; B plus	Lignes dédiées à ces gabarits.	4,32	4,47	4,48	4,59	4,64
Enveloppe B	La plupart des lignes du RFN sauf les lignes à gabarit particulier.	4,375 arrondi à 4,38	4,53	4,54	4,65	4,70
GC	Lignes dédiées au gabarit GC. Cas de construction ou de reconstruction d'ouvrage sur lignes classiques conformément à l'article 13 de la notice EF1C3n°1.	4,65	4,80	4,81	4,92	4,97
3.4	Lignes de l'ancien réseau Alsace–Lorraine des régions de Metz et Strasbourg ainsi que Belfort–Mulhouse sauf Saverne–Reding. Ligne Pontarlier–les–Verrières de la région de Dijon. Extrait de l'article 27 de la notice EF1C3n°1.	4,40	---	---	4,67	4,72
		4,50	---	---	4,77	4,82
		4,65	---	---	4,92	4,97

These values have been chosen, justified and approved on the base of years of experience taking into account the OCL designs, implemented on the given network.

3.6.5. Similar approach – with a given value of minimum contact wire height: 4950mm for AC and 4900 for DC - has been introduced in the HS ENE TSI for the trans-European high-speed rail system (Commission Decision 2008/284/CE[7]). At the development of the CR ENE TSI for the trans-European conventional rail system (Commission Decision 2011/274/EU[8]), the approach of setting out strict values for the minimum contact wire height was questioned, stressing the need for keeping the functionality (i.e.: avoid arcing) instead of requiring exact values, making the reference to the clause 5.10.4 of EN50119:2009, leaving the decision to the OCL designer.

3.6.6. During drafting the ENE TSI for the rail system in the Union (Commission Regulation (EU) No 1301/2014) the concept of retaining functionality has been preserved but with the change of the reference to the above-mentioned clause – 5.10.5 of 50119:2009. The main reason behind this change has been to assure that the OCL designer takes into account all possible conditions (as listed in the clause 5.10.5 of EN 50119:2009) having impact on the minimum contact wire height, particularly for new installations.

3.6.7. If this approach is justified in the case of new OCL designs it may create problems in its implementation for former design rules and OCL types. The issue became particularly critical in case of renewal/upgrading of installations in the specific, limited locations, namely under existing structures – tunnels or bridges (as it is mentioned in the request) – where the application of national regulation could be sufficient and not affecting interoperability and safety of the energy subsystem.

3.6.8. The problem raised in the French request may be identified in other Member States in the process of renewal/upgrading, where the railway electrification has been developed for many years and some requirements were established and implemented on base of experiences.

3.6.9. It is proposed to revise the ENE TSI in cases of renewal or upgrading of installations, without however granting the specific case requested by the French authorities as this would jeopardise the future harmonisation of TSI requirements relating to renewal/upgrading, particularly if other Member States would ask for additional similar specific cases too.

Pending such revision of the ENE TSI, it is proposed to accept the French rule IGTE 21404/004005 as an acceptable national means of compliance for the sole cases of renewal or upgrading of installations in France, when existing structure (tunnels and bridges) prohibit the full implementation of the methodology defined in the EN50119.

3.6.10. It should also be possible, if the given project requires a non-application of the TSI requirement related to the minimum contact wire height, to apply Art. 7.1(c) of the Directive (EU) 2016/797.

[7]Commission Decision 2008/284/CE of 6 March 2008 concerning a technical specification for interoperability relating to the 'energy' sub-system of the trans-European high-speed rail system (L 104, 14.4.2008, p.1).
[8]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 system (OJ L 126, 14.5.2011, p. 1)

4. Outcomes of the consultation

4.1.1. The Agency launched an external consultation with the network of NSAs, investigating bodies and representative bodies on October 31st, ending on November 22nd. The following organisations answered to the consultation:

1. NSAs: Spain, Italy
2. Representative Bodies: NB-Rail, EIM, CER
3. NIB: Swiss Transportation Safety Investigation Board STSB
4. OTIF

4.1.2. OTIF and NIB expressed opinions of not having any comments to the document.

4.1.3. CER and EIM delivered a common opinion. Although not having a specific comment to the document they call attention to the general problem of the implementation of TSIs in the processes of renewal or upgrading by saying: *The problems related to the application of the TSI to existing infrastructure should be tackled either by giving more flexibility for the application of the TSI in case of renewal or upgrade or by allowing more relaxed values for certain parameters on existing lines.* For this reason they recommended to review TSI clauses and their relevance in the case of renewal/upgrading, however with the aim of not creating *specific restrictions for the TSI-conforming vehicles.*

4.1.4. NB-Rail issued a general comment underlining that *for future upgrade or renewal the specific cases proposed by France would lead to not interoperable lines and therefore cannot be included in the TSIs because these requirements are a discriminatory access to other operators and cannot be any more acceptable rules* and *National implementation plan, describing Member States actions to comply with TSIs, are already required since long time (already present in the previous revision of TSIs).*

4.1.5. NSA Italy delivered comments to each French specific cases, related to INF subsystem, agreeing with the Agency's opinion and argumentation not to grant and include them in the INF TSI.

In case of Specific case concerning immediate action limitation for alignment and immediate action limit for longitudinal defects: *It is the opinion of ANSF that it is possible to refer to the table M2 attached M point M3 of the EN 14363 standard. That is to say a further evaluation is needed to understand if the aforementioned table allows by itself to exclude the need for a new specific case.*

4.1.6. NSA Spain and additionally NSA Italy addressed the French request related the minimum contact wire height. Both agreed with the Agency's opinion on not granting the specific case. They have also concerns related to the acceptance of the French rule as an AMOC and they stressed the need of being in line with the methodology defined in the EN 50119 also in case of predefined values.

ERA comment:

EN 50119, also mentioned in the ENE TSI, should be considered as a commonly accepted state of the art in case of mechanical OCL parameters and should be used as a reference in the new designs.

However, as mentioned in the point 3.6.4, there are existing national OCL design rules, which still apply to the former OCL types and their implementation is justified, approved and codified (like in the IGTE 21404/004005) through the years of experience. It should be possible to still use them in cases of renewal/upgrading of existing installations, if they do not create any obstacles for the run of TSI compliant trains.

This is the reason for the opinion - as in the point 5.2.1 - to accept the French rule IGTE 21404/004005 as an acceptable national means of compliance for the sole cases of renewal or upgrading of installations in France with an additional restriction: *when existing structure (i.e.: tunnel or bridge) prohibit the full implementation of the methodology defined in the EN50119.*

5. The opinion

5.1. INF Specific Cases

5.1.1. *Cant, Cant Deficiency; all related to INF TSI*

The current values indicated in the INF TSI for cant and cant deficiency are based on practical experience of European railways and represent an agreed compromise between the train performance, comfort levels and maintenance of track.

In the event of a new authorisation for placing in service is decided by the National Safety Authority the use of exceptional limit values for cant and cant deficiency could be accepted only for upgrading or renewal works, on a case-by-case basis according to Article 7 of Directive (EU) 2016/797. For these cases, evidences in relation to the associated specific conditions/restrictions need to be provided in order to demonstrate that the level of compliance with the related essential requirements is maintained. For this reason, the Agency is of the opinion that specific cases should not be granted.

5.1.2. *Immediate Action Limit for cant; related to INF TSI*

The French request for Specific Case as it is adopted by the SNCF Réseau rule (as in 3.3.3 above) does not correspond to the TSI basic parameter: immediate action limit for cant and for this reason it is not possible to compare the values set out in the French standard IN2640 and INF TSI. The justification delivered with the request does not give evidence of how the risk of derailment is reduced to an acceptable level as stated in point 3.3.2. For this reason, the Agency is of the opinion that specific cases should not be granted.

5.1.3. *Immediate Action limit of track gauge as an isolated defect; related to INF TSI*

The proposal of specific case, as described above in 3.4.2 requests less restricted values than in the INF TSI. The proposal of the values used by SNCF Réseau are justified by the use of additional restrictions, which are not included in the TSI and which cover the safety risks.
The SNCF Réseau "maximum gauge" values are based on specific fastening system efficiency requirements, which compensate for the margins incorporated in the TSI values.

The Agency is of the opinion that the additional requirements set out above on the "rail fastening systems" jeopardize the use of certified interoperability constituents, and therefore a specific case should not be granted.

5.1.4. *Immediate action limit for alignment and immediate action limit for longitudinal defects; related to INF TSI*

The proposal of a temporary specific case is requested due to the fact that on the French Network default measurements for isolated defects in alignment and in longitudinal level have to be performed with a maintenance machine equipped with "Mauzin" filters. These filters use wavelength different from those described in the INF TSI (EN 13848-5: 2008 = A1:2010 Standard (domain D1)).

The basic parameters related to the immediate action limits have a direct impact on the essential requirement safety. It is necessary to prove that the immediate action limit values indicated for the FR system (Mauzin) provides at least the same level of safety as the values preconized in the INF TSI *(EN 13848-5).*

The Agency is of the opinion that if the condition above is met the FR system (Mauzin) could constitute Acceptable Means of Compliance, for the sections 4.2.8.1 (1) and 4.2.8.2 (1) of INF TSI, *until the transition from the "Mauzin" measurement domain to the D1 measurement domain is concluded.*

5.2. ENE Specific Case

5.2.1. *In case of the request for the specific case referring minimum contact wire height in the ENE TSI, taking into account the above reasons the Agency proposes to refuse to grant a specific case to France and to recommend to the Commission to initiate the process of the amendment of the ENE TSI with the view on implementation of selected basic parameters and assessment methods in the renewal/upgrading.*

Pending such revision of the ENE TSI, it is proposed to accept the French rule IGTE 21404/004005 as an acceptable national means of compliance for the sole cases of renewal or upgrading of installations in France, when existing structure (i.e.: tunnel or bridge) prohibit the full implementation of the methodology defined in the EN50119.

Valenciennes, 17.12.2019

Josef DOPPELBAUER
Executive Director

EUROPEAN UNION AGENCY FOR RAILWAYS

Making the railway system work better for society.

Light Impact Assessment

TO 2019-02

Contents

1. Context and problem definition

1.1. Problem and problem drivers	In its letter Ref. Ares(2019)1269671 - 25/02/2019, the European Commission asked the Agency to provide an opinion regarding the French authorities request, related to Commission Regulations (EU) N° 1299/2014 (INF TSI) and (EU) N° 1301/2014 (ENE TSI). The request concerns several new specific cases proposed to be introduced in the above-mentioned TSIs. The new specific cases requested, relate to the requirements regarding cant, cant deficiency, the immediate action limit for cant, alignment and longitudinal level and the immediate action limits of track gauge as an isolated defect set out in INF TSI as well as requirements regarding minimum height of the overhead contact line set out in ENE TSI2 applicable in case of renewal and upgrading. In the request, French authorities underline that those new specific cases would not impact interoperability and the application of TSIs requirements in case of renewal and upgrading, would entail very high costs and could lead to a reduction of the current authorised maximum speed and thus to a reduction of the performance of the network.
1.2. Main assumptions	The technical analysis concerning the requests for specific cases within the INF TSI (see chapter 5.1 of the Technical Opinion) concluded to reject the specific cases related to cant, cant deficiency and the immediate action limit for cant because the specific conditions/restrictions to meet the essential requirements (if less stricter values are applied) can only be assessed at project level (in the framework of a derogation for a project) and not in a generic way. The specific case related to immediate action limit for cant was rejected due to the fact that there might be a negative impact concerning the essential requirements. The specific case related to the immediate action limit of track gauge as an isolated defect was rejected because it has a negative impact on the use of the interoperability constituent "rail fastening systems" jeopardizing the use of certified interoperability constituents. The technical analysis concerning the request for a specific case within the ENE TSI (see chapter 5.2 of the Technical Opinion) concerning minimum contact wire height concluded to reject the specific case however to modify the TSI accordingly in such a way, that the corresponding national rule becomes a harmonized rule within chapter 4 of a revised ENE TSI. This modification can only be done by applying the full procedure for revising TSIs. The scope of the impact assessment is limited to the requests where a positive opinion (from technical point of view) is provided. (*) This is only the case for the request related to a specific case concerning the immediate action limit for alignment and immediate action limit for longitudinal defects (see chapter 3.5 of the Technical Opinion). This

<table>
<tr><td></td><td>positive opinion bases on the assumption that that the immediate action limit values indicated for the FR system (Mauzin) provide at least the same level of safety as the values preconized in the INF TSI (EN 13848-5).

(*)

Each specific case represents an option which is compared to a baseline scenario (do nothing). However only valid options can be evalutated in an impact assessment. An option is considered to be invalid if the technical anlysis of this option results in a negative opinion or decision.</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>Infrastructure Manager</td><td>5

The IM uses vehicles for track maintenance equipped with “Mauzin” filters to measure alignment and longitudinal defects. To adapt the filters would require a change in the measurement system and its validation, which takes several years.</td></tr>
<tr><td></td><td></td></tr>
</table>1: very low 5: very high</td></tr>
<tr><td>1.4. Evidence and magnitude of the problem</td><td>The problem is reported in the French request for all above mentioned specific cases (see page 64, “risques economiques”).

The problem is evident and big however its magnitude was not quantified.</td></tr>
<tr><td>1.5. Baseline scenario</td><td>The INF TSI is unchanged and contains no provisions concerning the acceptance of Mauzin filters when evaluating intermediate action limits for alignment and longitudinal defects.</td></tr>
<tr><td>1.6. Subsidiarity and proportionality</td><td>The problem has to be addressed at EU level because it concerns a parameter within the INF TSI (chapter 4.2.8.1/4.2.8.2).</td></tr>
</table>

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 There are no specific objectives.
2.2.	**Link with Railway Indicators**	N/A

3. Options

3.1. List of options	Option 0: Baseline Option 1: Mauzin
3.2. Description of options	Option 1: FR system (Mauzin) constitutes acceptable means of compliance, for the sections 4.2.8.1 (1) and 4.2.8.2 (1) of INF TSI, until the transition from the "Mauzin" measurement domain to the D1 measurement domain is concluded
3.3. Uncertainties/risks	It is necessary to prove that the immediate action limit values indicated for the FR system (Mauzin) provide at least the same level of safety as the values preconized in the INF TSI (EN 13848-5). This proof was not available at the time, when the Technical Opion was provided.

4. Impacts of the options

4.1. Impacts of the options (qualitative analysis)

<Describe **qualitatively** all different categories of impacts for each of the analyzed options. Consider, where appropriate, all the economic, social and environmental impacts of the options. Highlight any impacts which are linked specifically to SMEs and potential impacts on competitiveness. Distinguish the impacts between positive and negative, as well as per category of stakeholder.>

Category of stakeholder		*Option Mauzin (compared to Baseline)*
Infrastructure Manager (*)	Positive impacts	Existing vehicles for track maintenance can still be used to measure alignment and longitudinal defects
	Negative impacts	N/A
Overall assessment *(input for section 5.1)*	Positive impacts	See above
	Negative impacts	See above

* IM in France or - in general - all IMs in EU, using vehicles for track maintenance with Mauzin filters.

5. Comparison of options and preferred option

5.1. Effectiveness criterion (options' response to specific objectives)

<Based on the findings from section 4.1, assess the extent to which the various options respond to the specific objectives, from 1-very low response to 5-very high response and calculate the average score (**effectiveness**).>

	Option 0 (baseline)	*Option 1 Mauzin*
Improving the efficiency and coherence of the railway legal framework	3	4
Improve economic efficiency and societal benefits in railways	3	5
Overall score	3	4
Effectiveness (average score)	3	4,5

5.2. Efficiency (NPV and B/C ratio) criterion

No quantitative data was provided, however we can assume that the B/C ratio >> 1 and the NPV >> 0 (as there are only benefits) for option 1

	<table><tr><td></td><td>*Option 0 (baseline)*</td><td>*Option 1*</td></tr><tr><td>***Efficiency***</td><td>N/A</td><td>5</td></tr></table>
5.3. Summary of the comparison	<table><tr><td></td><td>*Option 0 (baseline)*</td><td>*Option 1*</td></tr><tr><td>*Effectiveness*</td><td>3</td><td>4,5</td></tr><tr><td>*Efficiency*</td><td>N/A</td><td>5</td></tr><tr><td>***Overall rating***</td><td>(3)</td><td>4,75</td></tr></table>
5.4. Preferred option(s)	The preferred option is option 1 as it provides significant benefits for the French IM and does not negatively impact any other European rail stakeholder.
5.5. Further work required	N/A

6. Monitoring and evaluation

6.1. Monitoring indicators	N/A
6.2. Future evaluations	N/A