

OPINION

ERA/OPI/2014-9

OF THE EUROPEAN RAILWAY AGENCY

FOR

EUROPEAN COMMISSION

REGARDING

*REQUEST FROM SWEDEN OF A CRITICAL ERROR IN THE CONTROL COMMAND AND SIGNALLING
TECHNICAL SPECIFICATION FOR INTEROPERABILITY (CCS TSI) RELATED TO THE PROTECTION AGAINST
GSM-R INTERFERENCES*

Disclaimer:

The present document is a non-legally binding opinion of the European Railway Agency. It does not represent the view of other EU institutions and bodies, and is without prejudice to the decision-making processes foreseen by the applicable EU legislation. Furthermore, a binding interpretation of EU law is the sole competence of the Court of Justice of the European Union.



1 General Context

1.1 Request

The Swedish Transport Agency (Swedish National Safety Authority –referred to as SE NSA in this document) submitted by a letter to the European Commission DG Mobility and Transport (DG MOVE) , registered on the 26th of November 2014 “[t]he fact that protection of GSM-R equipment will be voluntary in the CCS TSI must be considered a critical deficiency in the TSI”.

By request for a technical opinion sent by DG MOVE B2 to ERA, dated 10/12/14, ERA is asked to provide an evaluation of the issues raised by SE NSA and to issue an opinion on the five questions from the European Commission related to the issues raised by SE NSA:

- A. *The Swedish Transport Agency states that “from mid-next year, the radio environment in Sweden will hinder a fully TSI conform vehicle from running on a fully TSI conform trackside; this must be considered as a critical error in the CCS TSI”. Please provide a technical opinion: is it a critical error in the TSI? If yes, what is the error? If not, please justify.*
- B. *The Swedish Transport Agency states that “the fact that protection of GSM-R equipment will be voluntary in the CCS TSI must be considered a critical deficiency in the TSI”. Please provide a technical opinion: is it a critical error in the TSI? If yes, how can it be solved. If not, please justify.*
- C. *The Swedish Transport Agency states that “the EC needs to establish harmonized levels of interferences along railways and mandatory requirements on protection corresponding to these levels of interference”. Please provide a technical opinion: shall EC do it? Where shall it be established (in which regulatory framework? Railway or telecom)?*
- D. *The Swedish Transport Agency states that IM may be forced to declare the characterization of the radio environment in the network statement a part of the nature of the infrastructure, and set the corresponding requirements on protective measures as a condition for access in order to maintain train services. Please provide a technical opinion on whether the network statement is the best placed to communicate the characterization of the radio environment. Is it not the task of the RINF?*
- E. *to avoid national access condition re interferences, do you think that the TSI should contain mandatory provision to retrofit trains with constituents compliant with the new ETSI standard related to the interference issue?*

The full text of the request can be found in Annex 1. The letter submitted by the SE NSA can be found in Annex 2.

1.2 Scope

The issues raised by SE NSA relate to the Commission Decision 2012/88/EU of 25 January 2012 on the technical specification for interoperability relating to the control-command and signalling subsystems (“CCS TSI”)¹.

In principle ERA has competence to express opinions and advices on matters related to the railway directives, however, the issues raised require to consider as well the legal framework that relates to the radio frequencies management, as per the Telecommunication Framework Directive².

¹ OJ L 51, 23.2.2012, p.1. CCS TSI has been subsequently amended by Commission Decision 2012/696/EU of 6 November 2012 (OJ L 311, 10.11.2012, p. 3) and by Commission Decision (EU) 2015/14 of 5 January 2015 (OJ L 3, 7.1.2015, p. 44).

² Directive 2002/21/EC of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (OJ L 108, 24.4.2002, p. 33) and its amendments.



1.3 Background information

The CCS TSI includes the technical specifications for the radio part of trackside as well as on-board subsystems, which is GSM-R. These specifications define amongst others the frequency bands used, coverage and wanted signal levels. The frequency band used by the GSM-R equipment is in proximity of the bands used by commercial GSM operators in many Member States.

Following the objective of the European Commission (DG CONNECT) of optimizing the use of the radio spectrum and due to the increasing demand of bandwidth from the general public, a Decision³ from the Electronic Communications Committee (ECC)⁴ was approved⁵ that allows the latest radio wireless technologies to use the frequency bands that were previously only assigned to GSM. This situation changes the radio environment in the locations where these technologies (3G/4G) are being deployed in these bands, adjacent to the GSM-R one.

There is always a risk of interferences between signals from different wireless networks, that has to be managed with the tools and procedures defined in the corresponding legal and technical documents. Radio interferences to the GSM-R domain may result in the interruption of GSM-R communication on the interfered geographical areas.

The frequency allocation in Sweden and its condition for usage can be considered to be the worst case scenario in terms of possible influence to the GSM-R receivers. The Mobile Network Operators hold a license that allows them to operate 3G/4G in the frequencies that are closer to the GSM-R ones, without any specific power limitation in it.

The deployment of 3G/4G in Sweden is one of the widest and earliest in Europe. Sweden has been the first Member State to worry about interferences caused by the 3G/4G emissions to GSM-R. The National Radio Authority has imposed conditions in the licenses of the Mobile Network Operators limiting the emitted levels in the 900 MHz band. These restrictions are valid only until the end of June 2015, and studies show that there will be severe interferences once the restrictions are removed. Interferences will have an effect on unprotected GSM-R terminals. SE NSA indicates that they expect that *"ETCS operation will be impossible in several locations for trains without protective measures. Voice calls will drop and no or poor access to the GSM-R network will occur"*.

2 Legal Background

2.1 Directive 2008/57/EC of the European Parliament and of the Council of June 2008 on the interoperability of the rail system within the Community⁶ (Interoperability Directive)

In the Whereas (16), the following statement can be found:

"(16) When developing new TSIs the aim should always be to ensure compatibility with the existing authorised system. This will help to promote the competitiveness of rail transport and prevent unnecessary additional costs through the requirement of upgrading or renewal of existing authorised subsystems to ensure backward compatibility. [...]"

³ ECC Decision (06)13 [Http://Www.Erodocdb.Dk/Docs/Doc98/Official/Pdf/Eccdec0613.Pdf](http://www.ero-docdb.dk/Docs/Doc98/Official/Pdf/Eccdec0613.Pdf)

⁵ ECC Decisions are regulatory texts providing measures on significant harmonisation matters, which CEPT member NRAs are strongly urged to follow. As any other CEPT deliverables, ECC Decisions are not obligatory legislative documents, however, they are normally implemented by many CEPT administrations.

⁶ OJ L 191, 18.7.2008, p. 1.



Article 2 states:

“ (1) ‘specific case’ means any part of the rail system which needs special provisions in the TSIs, either temporary or definitive, because of geographical, topographical or urban environment constraints or those affecting compatibility with the existing system. [...]”

Article 5 states that:

“2. Subsystems shall comply with the TSIs in force at the time of their placing in service, upgrading or renewal, in accordance with this Directive; this compliance shall be permanently maintained while each subsystem is in use “

Article 7 provides that:

“1. If, after its adoption, it appears that a TSI does not fully meet the essential requirements, the committee referred to in Article 29 may be consulted at the request of a Member State or upon the initiative of the Commission.

The Commission may request a technical opinion from the Agency. The Commission, with the involvement of the committee, shall analyse the technical opinion.

2. If the TSI needs to be amended because of a minor error and this does not justify an immediate revision, the Commission may recommend that the technical opinion is used pending the review of the TSI in accordance with Article 6(1). In that case, the Agency shall publish the technical opinion.

3. If the TSI needs to be amended because of an important or critical error, the revision procedure referred to in Article 6(1) shall be applied forthwith”.

Article 17 (3) states:

“ 3. Member States shall draw up, for each subsystem, a list of the technical rules in use for implementing the essential requirements and notify this list to the Commission when:

- no relevant TSI exists, or*
- a derogation has been notified under Article 9, or*
- a specific case requires the application of technical rules not included in the relevant TSI.”*

2.2 Annex A to the Annex III of the Commission Decision 2012/88/EU on the technical specification for interoperability relating to the control-command and signalling subsystems of the trans-European rail system⁷ (CCS TSI)

Annex A lists the applicable technical specifications for the interoperability constituents (ICs).

The strategy for implementing the CCS TSI is described in its chapter 7.

2.3 Regulation (EC) No 881/2004 of the European Parliament and of the Council of 29 April 2004 establishing a European railway agency (Agency Regulation)⁸

Article 10(2b) of this Regulation provides that:

“The Agency may be called upon by the Commission to provide technical opinions on urgent modifications to TSIs, in accordance with Article 7(1) of the Railway Interoperability Directive”.

⁷ OJ L 51, 23.2.2012, p.1. CCS TSI has been subsequently amended by Commission Decision 2012/696/EU of 6 November 2012 (OJ L 311, 10.11.2012, p. 3) and by Commission Decision (EU) 2015/14 of 5 January 2015 (OJ L 3, 7.1.2015, p. 44).

⁸ OJ L 164, 30.04.2004, p. 1, as last amended by Regulation (EC) No 1335/2008 (OJ L 354, 31.12.2008, p. 51).



2.4 Framework mandate to the European Railway Agency adopted on 13 July 2007 – C(2007)3371⁹

Section 2.2 of Framework mandate defines:

"2.2.1. Definition of critical errors

2.2.1.1 A TSI error shall be considered to be a critical error and solved following the procedure indicated in point 2.2.2, when it

- (a) prevents the completion of subsystem or interoperable constituent design;*
- (b) prevents the conformity assessment of the subsystem or the interoperable constituent;*
- (c) prevents the placing into service of the subsystem or the placing onto the market of the interoperable constituent;*
- (d) prevents the interoperability of the subsystem or the interoperable constituent*

2.2.1.2 Once a subsystem has been placed into service, operational experience may also indicate that a TSI error exists where such an error

- (a) prevents interoperability of the subsystem or the interoperable constituent or contributes to unsafe operation not foreseen as part of the certification of the subsystem and/or the interoperable constituent;*
- (b) contributes directly to an accident or incident.*

In this case, these shall also be considered to be critical errors."

Where a TSI error does not result in a critical error, then it can be considered as a minor error. It must still be made known to the Committee or the Commission, however there is less urgency for a rapid resolution. A simplified procedure to give information on these minor errors, including translation errors, pending a formal revision of the concerned TSI, is indicated in point 2.2.3.

Where a specification is impossible to apply in one Member State or in one specific situation, this difficulty shall be dealt with through the revision, for example by including a specific case to the TSI. This can be dealt with as part of the normal TSI revision process. In the case of urgency, the Member State shall use the rapid mechanism proposed in point 2.2.2. The Member State may use the derogation process, however not on the ground of an error because this case is not foreseen by the directive.

2.2.2. Procedure to be applied for critical errors

Where a critical TSI error is identified it is important that it is made known, as soon as possible, to the Committee or the Commission. If Notified Bodies identify such errors, they are able to raise a QC (Question / Clarification) through the NB Rail group. At a national level it is of value for Member States to provide a method for railway organisations (such as Railway Undertakings, Infrastructure Managers, contracting entities, manufacturers, wagon keepers etc.) to communicate such errors.

Once an error is formally made known, the Commission shall present it to the Committee and the following actions taken:

- (1) The Commission shall prepare a request to the Agency to provide a technical opinion on the error. The Agency shall consider:*

⁹ Commission Decision of 13/VII/2007 concerning a framework mandate to the ERA for the performance of certain activities under Directives 96/48/EC and 2001/16/EC.



- (a) the impact of the error on interoperability;*
- (b) the impact of the error on the interfaces (to other TSIs and within the TSI itself);*
- (c) a solution to resolve the error and*
 - its economic impact;*
 - its interoperability impact;*
 - its impact on interfaces within the TSI, and to other TSIs;*
 - confirmation that the essential requirements are met;*
 - details of its conformity assessment.*

The technical opinion shall be provided by the Agency within two months and shall contain detailed information on each of the areas identified above.

The technical opinion of the Agency shall be presented to the Committee.

(2) The Committee shall decide whether to adopt the technical opinion of the Agency. If adopted, then the solution and its conformity assessment shall be included within the next revision of the relevant TSI.

(3) The Agency shall publish the technical opinion and inform the safety authorities network thereof which will be requested to ensure wide dissemination. The technical opinion shall also be formally communicated, by the Commission, to the originator of the issue and to all Member States. It may also be placed on the NB Rail website.

The adoption of the technical opinion is a confirmation that it will be included in the next revision of the TSI.

Where an urgent solution is required for critical errors, the technical opinion may then be used (by the contracting entity, manufacturer or the Notified Body) to continue the design of the subsystem/interoperable constituent, or by the Notified Body for its conformity assessment. When critical errors have an impact on a system already in revenue service the Member State concerned will put into place all the measures deemed necessary for the mitigation of the problems if a two-month awaiting for a technical opinion is not sustainable. Notwithstanding this fact, the Member State concerned will notify the Commission of the specific unilateral measures it implemented for such mitigation.

The solution provided by the technical opinion has no legal force and is not part of the TSI, until its formal revision, adoption and notification are complete.

The EC declaration for the subsystem and / or the interoperable constituent must clearly state the technical opinion, and the related solution and conformity assessment, applied.”

Section 2.3.4 of Framework mandate provides that:

“..the Agency shall analyse the issue raised by the Commission or by the Committee under the format I.Q (interpretative question), Q.C (questions / clarifications) or similar, and provide answers to them.”



2.5 Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification¹⁰ (Railway Safety Directive)

Article 3 of the, specifies the contents of the Network Statement.

2.6 Commission Implementing Decision 2014/880/EU of 26 November 2014¹¹

This Decision defines the data to be provided by the Member States in the Register of Infrastructure (RINF).

The parameters related to TSI compliant radio (GSM-R) can be found under the table index 1.1.1.3.3.

Parameter 1.1.1.3.3.3 captures Optional GSM-R functions. According to the description, this parameter refers to:

"use of optional GSM-R functions which might improve operation on the line. They are for information only and not for network access criteria "

2.7 Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area¹²

Article 3 (26) defines the network statement and the obligations of the respective parties involved.

"(26) definition: 'network statement' means the statement which sets out in detail the general rules, deadlines, procedures and criteria for charging and capacity-allocation schemes, including such other information as is required to enable applications for infrastructure capacity"

Article 27.2 states that:

" 2. The network statement shall set out the nature of the infrastructure which is available to railway undertakings, and contain information setting out the conditions for access to the relevant railway infrastructure. The network statement shall also contain information setting out the conditions for access to service facilities connected to the network of the infrastructure manager and for supply of services in these facilities or indicate a website where such information is made available free of charge in electronic format. The content of the network statement is laid down in Annex IV".

2.8 Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive)¹³,

The Framework Directive establishes a harmonised framework for the regulation of electronic communications services, electronic communications networks, associated facilities and associated

¹⁰ OJ L 164, 30.4.2004, p. 44, as last amended by Commission Directive 2014/88/EU of 9 July 2014 (OJ L 201, 10.7.2014, p.9).

¹¹ Commission Implementing Decision 2014/880/EU of 26 November 2014 on the common specifications of the register of railway infrastructure and repealing Implementing Decision 2011/633/EU (OJ L 356, 12.12.2014, p. 489).

¹² OJ L 343, 14.12.2012, p. 32.

¹³ OJ L 108, 24.4.2002, p. 33, as last amended by Directive 2009/140/EC of the European Parliament and the Council of 25 November 2009 (OJ L 337, 18.12.2009, p. 37).



services. It lays down tasks of national regulatory authorities and establishes a set of procedures to ensure the harmonised application of the regulatory framework throughout the Community.

Article 3 describes the tasks to be carried out by the corresponding national regulatory authorities.

The tasks of the National Regulatory Authorities (NRAs) are described in Chapter III of the Framework Directive.

Article 9 in the Framework Directive details the specific tasks related to the management of radio frequencies for electronic communication services in 9a (Review of restrictions on existing rights) and 9b (Transfer or lease of individual rights to use radio frequencies).

Article 9 point 1 states that:

"1. Taking due account of the fact that radio frequencies are a public good that has an important social, cultural and economic value, Member States shall ensure the effective management of radio frequencies for electronic communication services in their territory in accordance with Articles 8 and 8a. They shall ensure that spectrum allocation used for electronic communications services and issuing general authorisations or individual rights of use of such radio frequencies by competent national authorities are based on objective, transparent, non-discriminatory and proportionate criteria."

In Article 9 point 3 states that:

" 3. Unless otherwise provided in the second subparagraph, Member States shall ensure that all types of technology used for electronic communications services may be used in the radio frequency bands, declared available for electronic communications services in their National Frequency Allocation Plan in accordance with Community law.

Member States may, however, provide for proportionate and non-discriminatory restrictions to the types of radio network or wireless access technology used for electronic communications services where this is necessary to:

(a) avoid harmful interference;

(b) protect public health against electromagnetic fields;

(c) ensure technical quality of service;

(d) ensure maximisation of radio frequency sharing;

(e) safeguard efficient use of spectrum; or

(f) ensure the fulfilment of a general interest objective in accordance with paragraph 4."

Article 20, on Dispute resolution between undertakings, states that:

"1. In the event of a dispute arising in connection with obligations arising under this Directive or the Specific Directives between undertakings providing electronic communications networks or services in a Member State, the national regulatory authority concerned shall, at the request of either party, and without prejudice to the provisions of paragraph 2, issue a binding decision to resolve the dispute in the shortest possible time frame and in any case within four months except in exceptional circumstances. The Member State concerned shall require that all parties cooperate fully with the national regulatory authority."



3 Analysis

3.1 Analysis of the request from the Commission point A

SE NSA states that *“from mid next year, the radio environment in Sweden will hinder a fully TSI conform vehicle from running in a fully TSI conform trackside; this must be considered as a critical error in the CCS TSI”*. The Commission asks whether this is a critical error in the TSI: *“if yes, what is the error? how can it be solved? If not, please justify”*.

Both the trackside and the vehicles referred to in the request have been able to be placed into service following the content of the CCS TSI. This shows that the current specifications are sufficient in order to complete the subsystems, to perform the conformity assessment, to place into service the subsystems and that interoperability of the subsystems is not prevented. Therefore, the requirements under point 2.2.1.1 of the Framework Mandate do not apply in this case and there is no “critical error”.

The subsystems have been already placed into service, and they are in operation. During the Swedish operational experience up to the current moment, there is no indication that there are items that prevent the interoperability of the subsystems or that contribute to unsafe operation not foreseen as part of the certification of the subsystems, nor there are items contributing directly to an incident or accident. In addition, no critical errors have been identified by other Member States with CCS TSI compliant subsystems. The requirements under point 2.2.1.2 of the Framework Mandate do not apply in this case either.

Furthermore, when a critical error in a TSI is found, it affects all the existing subsystems in the same way. In the situation described, the behaviour of the vehicle varies when the radio environment is different. Therefore the CCS TSI is not the root cause of the problem, but an external factor.

Conclusion

The above facts justify that the identified item is not considered as a critical error in the CCS TSI.

3.2 Analysis of the request from the Commission point B

SE NSA states that *“the fact that protection of GSM-R equipment will be voluntary in the CCS TSI must be considered as a critical deficiency in the TSI.”* The Commission asked: *“Is it a critical error in the TSI? If yes, how can it be solved. If not, please justify.”*

Applying the same justification of the analysis of point A in section 3.1, also the voluntary character of protection of GSM-R on-board equipment cannot be considered as a critical error.

Conclusion

The above facts justify that the requested item is not considered as a critical error in the CCS TSI.



3.3 Analysis of the request from the Commission point C

SE NSA states that *“the EC needs to establish harmonized levels of interferences along railways and mandatory requirements on protection corresponding to these levels of interference”*. The Commission asks *“shall EC do it? Where shall it be established (in which regulatory framework? Railway or telecom)?”*.

The specifications for the on-board equipment are referenced in the CCS TSI. They imply the compatibility of the on-board equipment with the radio environment as agreed at the moment of entry into force of the CCS TSI.

In parallel, the Member States have agreed on their responsibility to ensure protection against harmful interferences and to ensure technical quality of service to all the types of radio network or wireless access technology used for electronic communications services (Article 9.3 and 20 of the Framework Directive).

The management of the radio frequencies is allocated to the Member States in the Framework Directive. The description of the tasks of the NRAs in the Framework Directive clearly indicates that the responsibility of spectrum allocation lies in them, as well as the issuing of authorisations and individual rights of use of the radio frequencies.

Restrictions can be provided by them when necessary to avoid harmful interferences, to ensure technical quality of service, or to ensure the fulfilment of a general interest objective. In case of a dispute in relation to the obligations laid down in the Directive, the NRA shall issue at the request of either party, a binding decision to resolve the dispute (Article 20).

There is also a possibility for a Member State to request the EU to adopt legislation on any spectrum related matter, and to raise the issue within the Radio Spectrum Committee.

Given the fact that Member States are responsible for the management of spectrum, the CCS TSI relies on reasonable assumptions about the radio environment and expects that the Member States will ensure the adequate balance amongst the needs of all the types of radio network or wireless access technology used for electronic communications services. One of the tools to achieve this balance is coordination (see Annex 3 to this Opinion).

The Agency could not identify in the current legislation articles preventing the European Union to adopt legislation related to interference handling, e.g. harmonising the maximum level of cumulated unwanted emissions.

However, the question if the current legal telecom framework should be changed is beyond the competence of the Agency, as the scope of the Agency is limited to railway related legislation. Telecom legislation questions should be addressed to DG CONNECT.

The Agency concludes that the CCS TSI does not offer possibilities to include legally binding and harmonised level of interferences.

Conclusion

The question on whether the establishment of harmonized levels of interferences and mandatory requirements on protection corresponding to these levels of interference can be done at European Union level, cannot be answered by the Agency. The CCS TSI does not offer the possibility to define such levels.

The Agency cannot provide an opinion on the possible need to change this telecoms legal framework.



3.4 Analysis of the request from the Commission point D

SE NSA states that *"IM may be forced to declare the characterization of the radio environment in the network statement as part of the nature of the infrastructure, and set the corresponding requirements on protective measures as a condition for access in order to maintain train services"*. The Commission asks whether *"the network statement is the best placed to communicate the characterisation of the radio environment. Is it not the task of RINF?"*.

The RINF contains a static technical and geographical description of the network of the Infrastructure Manager(s) in the Member States. In Parameter number 1.1.1.3.3.3 (optional GSM-R functions) the Member State can give additional information about network characteristics. According to note 11 (*"data presentation: other"*), *"the interference level, leading to the need of additional on-board protection"* can be indicated. Member States are not obliged to provide this information, because there is no reference to this in the CCS TSI.

The information in the RINF has to be updated every 6 months.

The network statement sets out in detail the general rules, deadlines and all the information required to allow the applications for infrastructure capacity. Also in the Network Statement information concerning interference level could be included, but also there is no obligation for a Member State to do so.

The network statement shall be kept up to date and amended as necessary, however, it is linked to the deadline for requests for infrastructure capacity, which is usually published on annual basis.

Regarding the setting of requirements on protective measures as a condition for access in order to maintain train services in the network statement, the establishment of national rules is only possible in a number of cases, described in Article 17 (3) of the Interoperability Directive.

The Agency has already studied some situations where national rules were not corresponding to any of these cases, and its opinion has been that this is not possible¹⁴.

Conclusion

Both RINF and the network statement may contain information about interference levels.

The RINF seems a more flexible solution to include the description of the radio environment in different areas.

The RINF or the network statement cannot result in preventing free movement of TSI compliant trains on TSI compliant infrastructures.

3.5 Analysis of the request from the Commission point E

The Commission asks whether *"the TSI should contain mandatory provision to retrofit trains with constituents compliant with the new ETSI standard related to the interferences issues?"*.

According to index 64 and 65 of Annex A of the CCS TSI, the GSM-R voice cab radios and the GSM-R ETCS data only radios (EDOR) have to comply to the radio performance described in ETSI TS 100 910¹⁵. They

¹⁴ ERA Technical Opinion reference ERA/OPI/2011-05

¹⁵ ETSI TS 100 910 version 8.20.0 dated November 2005



imply the compatibility of the on-board equipment with the radio environment as agreed at the moment of entry into force of the CCS TSI.

Taking into account the expected changes in the radio environment, ETSI has developed a specification for improved radio performance, ETSI TS 102 933-1¹⁶. Cab radios and EDORs on the market may comply to this improved radio specification, which is not incompatible with the mandatory requirements in the CCS TSI.

The Agency is aware of the benefits of protection against interferences for the on-board subsystems, especially in the changing radio environment in the different Member States. Therefore, at the request of the sector, the Agency is working on a recommendation to require as a mandatory requirement that all the new, updated or upgraded on-board subsystems should comply with the improved characteristics described in the ETSI standard TS 102 933-1. The plan is to send this recommendation to the Commission by end of 2015.

The application of the CCS TSI does not have retroactive effects. In general, new TSIs are developed ensuring the compatibility with the existing authorised systems, to avoid the requirement of upgrading them, as per the Whereas (16) of the Interoperability Directive.

The implementation of a new requirement in the subsystems will not be immediate, there will be a transition period until TSI compliant subsystems are updated or upgraded, where subsystems fulfilling a new requirement and those not fulfilling it will coexist. The appropriate provisions have to be made in order to allow this coexistence.

The management of interferences is done at the Member State level. As a consequence, the interference situation is different in each Member State. Some apply coordination processes or have issued licenses in such a way that interferences are prevented and no protective measures on-board have to be taken.

This implies that a certain part of the vehicles in service in the EU will not be impacted by interferences.

Some Member States have launched a funding mechanism (e.g. NL), encouraging the installation of on-board protection for all vehicles which are authorised to run in its infrastructure. The cost-benefit ratio differs in each situation. Therefore, a mandatory retrofit of all vehicles in service in the EU is considered as a disproportionate measure. It would impact vehicles that may not be subject to interferences. It would take some time to implement the retrofit all over European Union, which will lead in any case to temporary measures in some Member States. These measures and the time to implement a mandatory retrofit will be similar to those in the case of a non-mandatory retrofit.

The management of the migration contains political aspects that are beyond the competences of the Agency.

Conclusion

The analysis of the technical implications of a possible mandatory retrofit is contained in the sections above. The Interoperability Directive aims at ensuring the compatibility with the existing authorised systems, but due to the political aspects of the proposition to impose a retrofit, the Agency is not in a position to issue an opinion on this point.

¹⁶ ETSI TS 102 933-1 version 1.3.1 dated June 2014



4 The opinion

The opinion of the Agency can be summarised as follows:

1. The alleged deficiency identified in the request is not considered as a critical error in the CCS TSI. Therefore, no amendment to CCS TSI is necessary to correct it.
2. The Agency is not in a position to issue an opinion on whether the establishment of harmonized levels of interferences and mandatory requirements on protection corresponding to these levels of interference can be made on European Union level in the telecommunication legal framework. The CCS TSI does not offer the possibility to define such levels.
3. Both the Network Statement and the RINF are adequate tools to indicate the radio environment in which a railway infrastructure is set. No TSI conform vehicle can be restricted to access a TSI conform infrastructure on this basis. Restrictions can be done only based on Notified National Technical Rules.
4. The Interoperability Directive aims at ensuring the compatibility with the existing authorised systems. The Agency is not in a position to issue an opinion on a mandatory provision to retrofit trains.

Valenciennes, 23/01/2015

Josef DOPPELBAUER
Executive Director



ANNEX 1

Request of technical opinion sent by the European Commission to ERA



Technical
request.pdf

ANNEX 2

Letter sent by the Swedish NSA to the European Commission



Request from SE -
Ares(2014)3967242.l



Annex 3

Coordination Principles

Harmful interferences are to be managed by the Member States' Frequency Regulator. Coordination between the different radio network operators (both public and railway) is the usual tool to limit the (impact of) interferences. In some cases specific conditions can be included in licenses.

The work of the NRAs in the Member States is not done in isolation. They coordinate their activities and approaches thanks to the participation in the Electronic Communications Committee (ECC) and the European Conference of Postal and Telecommunications Administrations (CEPT). Through the ECC Decisions, Recommendations and Reports, different items can be studied and the NRAs can agree on a shared strategy and common practices. For information, extracts from the most relevant ECC Reports are given below.

The Swedish National Radio Authority has imposed conditions in the licenses of the Mobile Network Operators limiting the emitted levels in the 900 MHz band. These restrictions are valid only until the end of June 2015, giving a certain time for the railways to install improved receivers and to enhance the GSM-R signal level where necessary. However, it is strongly recommended to apply – in particular after June 2015 - appropriate coordination principles, e.g. according to the anticipated Report 229¹⁷.

This Report 229 is currently in draft stage at ECC level, and is expected to be published Q1 2015. The aim of this report is to enable a better co-existence between GSM-R and MFCN and to give guidance to administrations as well as GSM-R and MFCN licensees at 900 MHz on how this goal could be reached. It defines options for a generic and open framework for the discussions between GSM-R and MFCN licensees. This report provides a systematic approach based on a coordination/cooperation process and guidelines for the dialogue amongst administrations as well as GSM-R and MFCN licensees, taking into account existing coordination/cooperation processes. It does not list the possible technical solutions to achieve better co-existence, as these are already described in ECC Report 162. This Report considers both the situations where no improved GSM-R receivers are installed and the situation where all GSM-R mobiles have improved receivers.

In the past, co-existence studies have been carried out by ECC, leading to Report 96 and Report 162¹⁸. Report 96 dealt with the compatibility study between UMTS900/1800 and systems operating in adjacent bands. Report 162 focused on the coexistence between public mobile networks operating in the 900 MHz band and GSM-R networks operating both in the GSM-R band (876-880 MHz / 921-925 MHz) and the E-GSM-R band (873-876 MHz / 918-921 MHz). It provided guidance to improve the coexistence between GSM-R and public mobile networks and described potential mitigation techniques which may be considered by national administrations and/or operators on both sides to address interference cases between GSM-R and public mobile networks on a local/regional/national basis. It stated that in addition preventive methods to avoid interference situations between GSM-R and public mobile networks can be applied on a national/regional basis. Interoperability and continuity of GSM-R service shall be ensured from one country to another one, as well as public operators' licence obligations have to be fulfilled.

¹⁷ http://www.cept.org/ecc/groups/ecc/wg_fm/fm_54/client/meeting-documents

¹⁸ <http://www.erodocdb.dk/doks/doccategoryecc.aspx?doccatid=4>

