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ACCOMPANYING REPORT 013REC1047 TO THE RECOMMENDATION OF THE EUROPEAN UNION AGENCY FOR RAILWAYS

on

*the Amendment of Commission Implementing Decision
2014/880/EU on the common specifications of the register of
railway infrastructure*

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1. Executive summary

The European Register of Infrastructure was introduced on the legal basis of Article 35 of Directive 2008/57/EC (Interoperability Directive) as to provide for transparency concerning the main features of the European railway infrastructure. The RINF Decision [4] introduced a computerised common user interface (RINF CUI) which simplifies queries of infrastructure data.

The revised Interoperability Directive (Directive (EU) 2016/797, Article 49) introduced more specific requirements on the register to record the values of the network parameters necessary to check the technical compatibility with vehicles and, if relevant, conditions for the use of fixed installation and other restrictions.

This amendment introduces the items necessary for the route compatibility check that will be published in Appendix D.1 of OPE TSI [3] and basic functionalities that facilitate for users the access to the data.

Some items of the register of Infrastructure described in Table 1 of the Decision have been added, removed or slightly modified to improve the description of the national networks or to give more efficient information.

2. Introduction

This accompanying report complements the Recommendation 013REC1047 of the European Union Agency for Railways for the amendment of Commission Implementing Decision 2014/880/EU on the common specifications of the register of railway infrastructure (RINF Decision).

The European Register of Infrastructure had been introduced by Article 35 of Directive 2008/57/EC [2]; it provides for transparency concerning the main features of the European railway infrastructure. The RINF Decision [4] introduced a computerised common user interface (RINF CUI) which simplifies queries of infrastructure data.

This interface, set up and managed by the Agency, is in production since end of October 2015. As of end May 2018, around 62 % of the total expected data were already imported by the entities in charge of the RINF implementation at national level (NREs).

New provisions introduced by Article 49 of Directive (EU) 2016/797 [2] require the register of infrastructure to publish the values of the network parameters necessary to check the technical compatibility with vehicles and, if relevant, conditions for the use of fixed installation and other restrictions.

The capability of the register of infrastructure to meet the provisions of the new Interoperability Directive and the ability to meet the expectations of users were assessed leading to the finding that a revision of the RINF Decision is needed.

Article 37(2) of Regulation (EU) 2016/796 [1] requires the Agency to act as the system authority for all registers and databases referred to in particular in Directive (EU) 2016/797 [2]. In such capacity the Agency may address recommendations to the Commission regarding improvements to the existing registers.

3. Workgroups

There have been two working parties put in place in the frame of the implementation of the RINF Decision in force (Decision 2014/880/EU):

RINF Development Working Party -

ERA has established the working party by the end of 2011 to prepare the Application guide and to draw up the specifications of the CUI. Since 2014, the Working party regularly met to follow the progress of the RINF implementation and the modifications and updates of the RINF CUI.

RINF Network Working Group -

The RINF Network stated by article 6.1 of the RINF Decision brings together the National Register Entities (NRE) in charge of setting up and maintaining the national infrastructure registers of each Member State. Its main purpose is to coordinate and support the implementation of these registers and their availability through the common user interface. It also contributes to identify needs of modifications of the IT application and of the application guide. 28 NREs are already nominated.

The role of the two groups are complementary and most of the participants of the RINF Network WG were also representatives in the RINF Development WP. Joint meetings of the two groups were regularly organized since mid-2015 to follow the implementation of the current Decision and the day to day improvements of the specifications of the RINF CUI.

The Agency decided to go on working in the same way after having strengthened the role of the RINF Development WP as the working party for the revision of the RINF Decision according to Art. 49 of Regulation (EU) 2016/796 [1]. The Agency invited in November 2017 every sector organisation and national safety authority (NSA) to nominate or confirm representatives to the RINF Development WP. CER, EIM, UNIFE, NB-Rail and NSA CH, CZ, AT, DE, DK, ES, FI, FR, LU, NL, PT, SE, SK and UK nominated their representatives.

Four joint meetings of the WG “RINF Network” and of the WP “RINF Development” took place, with the kick-off meeting on 18th January 2018 until the end of May 2018. Two additional meetings are planned to take place during autumn 2018 to prepare the updated Application guide.

The table below indicates all the WP meetings that were held during the project.

| Meeting | Duration | Date |
|---------------------|----------|------------|
| WP kick-off meeting | 1 day | 18/01/2018 |
| WP 2nd meeting | 1 day | 8/03/2018 |
| WP 3rd meeting | 1 day | 26/04/2018 |
| WP 4th meeting | 1 day | 30/05/2018 |

4. Working method

Working groups

Each joint meeting of the WG “RINF Network” and of the WP “RINF Development” was organised in two parts. The first was dedicated to the implementation of the RINF Decision in force and to the proper functioning of the RINF Common User Interface, the second to the revision of the RINF Decision [4]. Rail Net Europe was invited to present its project of “big data” on 26 April 2018.

Working paper

In order to guide a discussion and gather necessary evidence, the Agency prepared a document that provides an inventory of all the identified use cases of the RINF that could be implemented by the RINF CUI. The use cases are breakdown to those requested by the legal framework and to others as suggested by the railway sector or by the Agency. The document also determines the different needs for new parameters or elements and functionalities classified according options for the route compatibility check. The purpose of the document was to provide guidance to the discussion with stakeholders on the contents of the revision. The working paper was thoroughly discussed during the first three meetings. It has been progressively updated taking in consideration comments received from participants. A consensus have been rapidly reached that the revision of RINF specification should focus on core functionalities and parameters required by the Interoperability directive. The document is available on ERA extranet at [013REC1047 Revision Working Paper 1.0](#).

New parameters needed for route compatibility check

The role of the RINF workgroups was to ensure that the updated specifications proposed for the register of infrastructure should allow the publication of new parameters needed for route compatibility check. These new parameters will be defined in the Appendix D.1 of OPE TSI [3] whose title is “Elements the Infrastructure Manager has to provide to the Railway Undertaking for the train compatibility over the route intended for operation”.

An important coordination effort has been done by Agency staff to follow the works of the groups in charge of proposing the Amendment of the Commission Implementing Acts (TSIs LOC & PAS, WAG and CCS) for alignment with Art 4.3(i) of the Interoperability Directive. The RINF groups were regularly informed of the number of parameters and of those that already identified.

Working document

In parallel, the Agency prepared, on the basis of the current RINF Decision, a working document drafting the amended decision. This working document takes into account:

- the feedback of the four years of implementation and the lessons learned. Mainly, the flexibility needed for the management of the formats of the parameters, their repeatability, their links, and the possibility for NRE not to provide a complete set of values for all parameters but to allow them to declare a parameter as “Not yet available”. There was a consensus in the group to manage these aspects in the Application Guide and not in the decision itself,
- the core functionalities required by the Fourth Railway Package. The current CUI allows users to export the characteristics of identified Operational Points and Sections of Lines. A search functionality allows to make searches on the network of one or several Member States with a filtering of technical characteristics. However, the identification of characteristics of possible routes between two points defined by the user is missing, instead of doing it manually,
- the possible needs of improvement of the current IT application (new elements).

All members of the groups agreed that the current structure of the IT tool was able to host new parameters. The ability of the current IT application to evolve provided that information should not be too long or complex. E.g.; it is recommended to identify via the RINF the existence of a document than to copy the full content of the document in the database.

5. Main aspects covered

5.1. Ability of the current structure of RINF to fulfil the requirements of Article 49 of Directive (EU) 2016/797

RINF describes the railway network using operational points and sections of lines. Parameters describing technical characteristics are attached to running tracks in sections of lines and to running tracks and sidings in operational points. The level of description of the railway infrastructure by the current RINF is compatible with the provision of information needed for route compatibility check. Moreover, this structure of the IT application is able to accept the introduction of new parameters in addition to existing ones for the purpose of route compatibility check with no impact of the database speed.

OPE TSI defines the route as “the particular section or sections of line”. That corresponds to the current description of the network by the RINF.

5.2. Missing functionalities of the RINF common interface

Identification of a route by a user

The current IT application allows searches on Section of Lines (SoL) and Operational Points (OP) with filters based on the possible values of parameters. The Sols or OPs that correspond to the filters are listed or can be visualised on a map. Their technical characteristics can be exported in several formats by any user.

It is currently possible to identify, then to select the sections of lines belonging to a given route and export one by one their technical characteristics. There is an easy way to identify Sols and OPs that belongs to a route between two OPs. That seems to be the main functionality that should be developed.

Delivery of a certificate

A certificate should be delivered each time a railway undertaking exports data from the RINF CUI to check the route compatibility as an evidence of the date and of the content.

Production of thematic maps

The current IT application allows only to visualise the result of a search by displaying the corresponding sections of lines and operational points on a map. This functionality should be improved to allow displaying several characteristics of the network with a legend.

Application Programming Interface

Most of the railway undertakings expect to be able to query the common user interface through direct interface between computers. Some infrastructure managers have the same expectation. Rail Net Europe indicated also their interest to use the basic description of the networks in RINF to feed their “big data” project. TENtec and European Rail Locations Portal databases developed by DG Move could in the future also benefit from such functionality. The Agency recommends to introduce this ability in the draft implementing act.

5.3. RINF used as a reference database

The expectation of NREs is that the RINF evolves from the Register assuring transparency to a functional reference database that contain reference data that are understood as master data for rail infrastructure in Single European Railway Area. As such, the data and IT interoperability must be assured. Some specific use cases were discussed in particular: Network statement data and statistical data reporting.

5.4. Implementation of the new specifications

The majority of the NREs expressed their preference to first complete the implementation of the RINF Decision using the current IT application. In the meanwhile, a new RINF common User Interface should be developed on the basis of new specifications. The switch between the two applications should be foreseen as a one single step and not as an incremental update process, which could lead to undue extra costs.

The opinion of the Agency was to progressively update the CUI with new parameters as quickly as possible once they have been validated and to upgrade the functionalities. The implementation of these new parameters (and the delivery of data) should only be mandatory after the deadline proposed in the Agency recommendation. In the same way, the existing parameters that should eventually be removed will be kept until this deadline. The upgraded CUI should become available by the end of 2019 to allow NREs to import these new data in early 2020. An updated Application guide corresponding to the new specifications should be available before the end of 2018.

This proposal was accepted by participants of the groups. It was also highlighted that NREs and IMs would need sufficient time first to update their IT processes (including budget planning and approval process), secondly to collect and import data in the common user interface.

5.5. Roles and responsibility

Data made available via the RINF CUI are those of Member States. A process must be defined at national level for the provision of data to the NRE that is in charge of embedding this data in a single xml file that meets the RINF specifications. When a NRE submits its file to the CUI, the CUI checks the conformity of the xml file to the RINF specifications but makes no “quality” control of the data itself. It is to each Member State to ensure that the process it defines is able to guarantee that the data provided by each concerned entity is reliable, accurate and up to date.

5.6. Application guide

As with any project based on the development of software, modifications are necessary during the implementation phase of the RINF. The application guide provides this flexibility for routine management. It will continue to evolve over time as new requirements or new possible values for some parameters are identified in the frame of a change management process.

5.7. Improvement already introduced in the IT application but not described in the RINF Decision

Location point

Location point (LP) means any specific point on a track of a SoL where value of a parameter changes. This feature allows to describe in a section of line, at the level of the track a change in the value of a parameter. This point is located with geographical coordinates and railway location.

Creation of xml file

A dedicated functionality allowing IMs to create “manually” the xml file describing their network and to send it to the NRE via the RINF CUI. Another functionality allows the NRE to merge the xml file received from the IM and to merge it with others files in a single one.

Validity dates

The current CUI allows NREs to indicate the validity dates of parameters of running tracks and of sidings. This functionality will become mandatory for parameters needed for route compatibility check.

5.8. Further developments

Accurate description of the geometry of the lines

The current RINF CUI visualises on a map sections of line by a straight segment between consecutive operational points. The TENtec data basis and the European Rail Locations Portal defined and maintained by DG Move are describing the network with accurate geometry (GIS shapes). There is currently no obvious need for this accurate description in the RINF. This mode of representation will naturally impose itself in the future for the reason that it will be used by most of the IMs to describe their network. Furthermore, it strengthens the attractiveness of a database describing a railway network.

Possible movements between sections of line

The current RINF CUI provides no indication on the possible movements between the sections of lines. It was agreed that this kind of information is not part of the route compatibility but is related to the operation and needs relationship between the railway undertaking and the infrastructure manager. To add connectivity information would lower the level of description of the RINF to micro level. It would also require Infrastructure managers to remodel the description of their network and time to capture more data.

These two developments before envisaging their introduction in the CUI need to be investigated in more details. The Agency recommends to introduce an evaluation clause in the draft implementing act.

5.9. Modifications envisaged to be introduced in table 1 of the annex of the draft implementing act

25 parameters that will be listed in the Appendix D.1 of OPE TSI have to be newly introduced in the RINF common use interface. 1 existing parameter is upgraded to be used for route compatibility check.

2 parameters, according article 14.1 of the Interoperability Directive [2] have to be introduced for allowing Member States to mention in the register for section of line and for operational points rules and restrictions of a strictly local nature.

1 parameter has to be introduced to describe the belonging to a quieter route as set out in article 5a of the Recommendation 006REC1072 amending the TSI Noise.

4 new parameters have to be introduced for a better description of ERTMS and GSM-R.

As a result of a setting up of annex D1 of OPE TSI, 10 of the current parameters are removed or replaced by the new parameters. They will be kept in RINF during the transition described in 5.3 above.

2 existing parameters could be made mandatory for the provision of combined transport codes for sections of lines belonging to the trans-European network.

3 new parameters could be introduced to:

- provide specific information of the network at the level of the track of the section of line,
- inform of the existence of documents on tunnels clearance,
- link sections of lines of the RINF to sections of the trans-European network.

5.10. Options

Three options for the content of the new specifications were defined as below:

Option 1

(32 new parameters): Only changes strictly required by the 4th RP legislation are implemented. Specifically, the new parameters needed to enable the route compatibility check are introduced (25) and four new parameters introduced for a better description of ERTMS/GSM-R, two new parameters are introduced allowing to notify the technical rules of strictly local nature. A new parameter, reflecting the revision of TSI NOI and corresponding to the “quieter” route is introduced. Following a thorough assessment, some of the current parameters are removed, modified or replaced by the new parameters.

The user interface is upgraded to enable:

- identification and the export of SoLs and OPs that are part of the route (as defined by the user and export the corresponding characteristics);
- delivery of certificate for exported characteristics.

Option 2

(35 new parameters): In addition to Option 1, a few additional technical parameters are introduced to streamline MSs reporting obligations (e.g. reporting to TENtec database) and to inform about the existence of the documents on tunnels clearance gauge when it exist or to provide a specific information on the section of line. The provision of two parameters related to intermodal transport is now made mandatory for the TEN network.

The user interface (CUI) is upgraded to enable:

- visual representation of schematic network maps,
- implementation of the Application Programming Interface (API).

Option 3:

In addition to Option 2, connectivity parameters are introduced for operational points (OPs) to enable route planning between non-adjacent OPs.

The user interface (CUI) is upgraded to enable:

- accurate description of the geometry of the lines:
- description of possible movements between sections of lines

Based on the Impact Assessment, option 2 is preferred.

6. Main provisions of the recommendation

The registers of infrastructure of Member States shall be available for consultation via the common user interface (RINF CUI) set up and developed according to the current RINF decision by the Agency. The RINF CUI will be updated following the new specifications published in the Annex.

6.1. Features of the register

6.1.1. Elements

The definition of the location point is added in article 3.1 of the Annex to the Draft Implementing Act.

6.1.2. Items

Table 1 of the Annex to the Draft Implementing Act sets out the items of the Register of Infrastructure relative to the section of lines and to the operational point, technical parameters being attached to the tracks. This basic structure remains unchanged in the amendment.

Each item is identified by any of the following marks: “new”, “not changed” when it already exists in Decision 2014/880-EU, “updated” when it has been modified or “deleted” when it does not exist anymore. Parameters required for route compatibility checks are indicated as “Needed for RC” with reference to appendix D1 of new OPE TSI. Deleted parameters have been kept in the table and are presented as struck through. They will be still used during the transition period until the deadline for the full implementation of the new specification proposed in the Agency recommendation.

However, for a proper implementation of RINF, more details related to the items need to be specified, such as: xml label, applicability status, ability to be repeated, data presentation; explanations, examples; relation to other items; references to relevant clauses of the TSIs.

Those additional details related to the RINF items and their governance process will be specified in the RINF application guide referred in Article 3 and published by the Agency.

6.2. Minimum required functionality

The list of minimum required functionalities in Article 4.3 of the Annex to the Draft Implementing Act is updated with the following functionalities:

- prepare files for IM users (already developed),
- merge files for NRE users (already developed),
- search for RINF data including OPs and/or SoLs with particular RINF characteristics, including data validity (already developed),
- visual Representation of RINF data allowing publication of schematic maps,
- list SoLs and OPs which are part of a route defined by the user and export the corresponding characteristics,
- deliver certificate each time the export of characteristics resulting from a search is intended to be used by the RU for checking the compatibility according art 23 of IOD,
- application programming interface (API) to be defined.

7. Annex 1: Definitions and abbreviations

7.1. Table 1: Table of definitions

| <i>Definition</i> | <i>Description</i> |
|-------------------|--|
| The Agency | European Union Agency for Railways |
| CCS TSI | Technical specification for interoperability relating to the 'control-command and signalling' subsystems |
| LOC&PAS TSI | Technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem |
| NOI TSI | Technical specification for interoperability relating to the subsystem 'rolling stock — noise' |
| OPE TSI | Technical specification for interoperability relating to the 'operation and traffic management' subsystem |
| WAG TSI | Technical specification for interoperability relating to the subsystem rolling stock — freight wagons |

7.2. Table 2: Table of abbreviations

| <i>Abbreviation</i> | <i>Description</i> |
|---------------------|--|
| AT | Austria |
| BG | Bulgaria |
| CER | Community of European Railway and Infrastructure Companies |
| CH | Switzerland |
| CUI | Common User Interface |
| CZ | Czech Republic |
| DE | Germany |
| EIM | European Rail Infrastructure Managers |
| EL | Greece |
| ES | Spain |
| EU | European Union |
| FI | Finland |
| FR | France |
| IM | Infrastructure Manager |
| NB-Rail AISBL | Notified Bodies Association |
| NL | The Netherlands |
| NSA | National Safety Authority |

| <i>Abbreviation</i> | <i>Description</i> |
|---------------------|--|
| PL | Poland |
| PT | Portugal |
| RINF | Register of Infrastructure |
| RU | Railway Undertaking |
| SE | Sweden |
| SI | Slovenia |
| TSI | Technical Specification for Interoperability |
| UK | United Kingdom |
| UNIFE | The European Rail Industry |
| WP | Working Party |

7.3. Table 3: Table of reference documents

| <i>N°</i> | <i>Title</i> | <i>Reference</i> | <i>Version</i> |
|-----------|--|------------------|----------------|
| [1] | Guide on the application of the common specification of the register of Infrastructure | ERA/GUI/RINF/IU | 1.2.2. |

7.4. Table 4: Table of reference legislation

| <i>N°</i> | <i>Title</i> | <i>Reference</i> | <i>Version</i> |
|-----------|---|------------------|----------------|
| [1] | 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 | 2016/796 | |
| [2] | 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 (recast) | 2016/797 | |
| [3] | Commission Regulation 2015/995/EU (8 June 2015) amending Decision 2012/757/EU (14 November 2012) and repealing Decision 2013/710/EU (2 December 2013). | 2015/995 | |
| [4] | Commission Implementing Decision of 26 November 2014 on the common specifications of the register of railway infrastructure and repealing Implementing Decision 2011/633/EU | 2014/880 | |