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Application Guide for the European Register of Authorised Types of Railway Vehicles (ERATV)	
According to Article 5(1) of Commission Implementing Decision 2011/665/EU	
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0. DOCUMENT INFORMATION

0.1. Amendment record

Table 1: Status of the document

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1. INTRODUCTION AND BACKGROUND

1.1. Legal basis

- 1.1.1. According to Article 19(1) of [1] the Agency Regulation the European Railway Agency (ERA) “shall make publicly accessible” the European register of authorised types of vehicles.
- 1.1.2. On 4 October 2011 Commission Implementing Decision [25] 2011/665/EU on the European register of authorised types of railway vehicles (hereafter [25] “the ERATV Decision”) was adopted.
- 1.1.3. Its Article 5(1) states that “The Agency shall publish and keep up-to-date an application guide for the European register of authorised types of vehicles. Among other information, this guide shall include for each parameter a reference to the clauses of the technical specifications for interoperability that state the requirements for this parameter”.

1.2. Scope

- 1.2.1. The guide provides explanation of some provisions contained in [25] the ERATV Decision and links them with the provisions of the vehicle related TSIs.
- 1.2.2. It also includes a summary on roles and responsibilities of the actors involved in the registration of authorised types of vehicle.
- 1.2.3. This guide does not contain any legally binding advice. It may serve as a clarification tool without however dictating in any way compulsory procedures to be followed, and without establishing any legally binding practice. The guide provides explanations on the provisions contained in [25] the ERATV Decision and TSIs and should be helpful for understanding them.
- 1.2.4. The guide should be read and used only in conjunction with the Interoperability Directive, relevant TSIs and [25] the ERATV Decision and regulations in order to facilitate the application of the latter, but does not substitute for them.
- 1.2.5. The guide has been prepared by ERA with the support of the representative bodies from the railway sector and the NSAs in the framework of the ERATV WP.
- 1.2.6. The guide is publicly available and will be regularly updated in line with adoption of new TSIs or amendment of the existing ones. The reader should refer to the ERA website for information about its latest available edition.

1.3. Outside the Scope

- 1.3.1. A registration of an authorised type of vehicle (which is dealt with in Article 34 of [2] the Interoperability Directive) should not be mixed up with an authorisation of type of a vehicle (which is dealt with in Chapter V of [2] the Interoperability Directive). The latter is not within the scope of this guide.
- 1.3.2. This Guide does not explain how to use the IT applications that will support the ERATV as this will be covered by the User Manuals.

1.4. Target Audience

- 1.4.1. All the players involved in the verification of conformity and authorisation of types of vehicle that is the national safety authorities, applicants for authorisation, notified bodies (NoBos) and designated bodies (DeBo), CSM assessment bodies are the target audience.

2. REFERENCE DOCUMENTS

Table 2: Reference documents

Ref.	Document reference	Official Journal	Last modification/ amendment	Version
[1]	Regulation (EC) No 881/2004 establishing a European Railway Agency (Agency Regulation)	L 220, 21.06.2004	Regulation (EC) No 1335/2008 L 354, 31.12.2008	--
[2]	Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community	L 191, 18.7.2008	Directive 2009/131/EC L 273, 17.10.2009 Directive 2011/18/EU L 57, 2.3.2011	--
[3]	Commission Directive 2009/131/EC of 16 October 2009 amending Annex VII to Directive 2008/57/EC of the European Parliament and of the Council on the interoperability of the rail system within the Community	L 273, 17.10.2009	--	--
[4]	Commission Directive 2011/18/EU of 1 March 2011 amending Annexes II, V and VI to Directive 2008/57/EC of the European Parliament and of the Council on the interoperability of the rail system within the Community	L 57, 2.3.2011	--	--
[5]	Commission Decision 2002/731/EC of 30 May 2002 concerning the technical specification for interoperability relating to the control-command and signalling subsystem of the trans-European high-speed rail system referred to in Article 6(1) of Council Directive 96/48/EC	L 245, 12.9.2002	Repeal: Decision 2006/860/EC L 342, 7.12.2006	--
[6]	Commission Decision 2002/732/EC of 30 May 2002 concerning the technical specification for interoperability relating to the infrastructure subsystem of the trans-European high-speed rail system referred to in Article 6(1) of Council Directive 96/48/EC	L 245, 12.9.2002	Repeal: Decision 2008/232/EC L 84, 26.03.2008	--

Table 2: Reference documents

Ref.	Document reference	Official Journal	Last modification/ amendment	Version
[7]	Commission Decision 2002/733/EC of 30 May 2002 concerning the technical specification for interoperability relating to the energy subsystem of the trans-European high-speed rail system referred to in Article 6(1) of Directive 96/48/EC ()	L 245, 12.9.2002	Repeal: Decision 2008/284/EC L 104, 14.4.2008	--
[8]	Commission Decision 2006/66/EC of 23 December 2005 concerning the technical specification for interoperability relating to the subsystem 'rolling stock — noise' of the trans-European conventional rail system	L 37, 8.2.2006	Repeal: Decision 2011/229/EU L 99, 13.4.2011	--
[9]	Commission Decision 2006/679/EC TSI relating to the CCS subsystem of the trans-European conventional rail system	L 284, 16.10.2006	Decision 2008/386/EC L 136, 24.5.2008 Decision 2010/79/EC, L 37, 10.02.2010	--
[10]	Commission Decision 2006/860/EC TSI relating to the CCS subsystem of the trans-European HS rail system	L 342, 07.12.2006	Decision 2008/386/EC L 136, 24.5.2008 Decision 2010/79/EC, L 37, 10.02.2010	--
[11]	Commission Decision 2006/861/EC TSI relating to the 'Rolling stock – Freight Wagons' subsystem of the trans-European conventional rail system	L 344, 08.12.2006	Decision 2009/107/EC L 45, 14.2.2009	--
[12]	Commission Decision 2007/756/EU of 9 November 2007 adopting a common specification of the national vehicle register provided for under Articles 14(4) and (5) of Directives 96/48/EC and 2001/16/EC	L 305, 23.11.2007	Decision 2011/107/EU L 43. 17.2.2011	-
[13]	Commission Decision 2008/217/EC TSI relating to the Infrastructure subsystem of the trans-European HS rail system	L 77, 19.03.2008	–	--

Table 2: Reference documents

Ref.	Document reference	Official Journal	Last modification/ amendment	Version
[14]	Commission Decision 2008/163/EC TSI SRT trans-European HS and conv. rail system	L 64, 07.03.2008	Decision 2011/291/EU L 139, 26.5.2011	--
[15]	Commission Decision 2008/164/EC TSI PRM trans-European HS and conv. rail system	L 64, 07.03.2008	–	--
[16]	Commission Decision 2008/232/EC TSI Rolling stock trans-European HS rail system	L 84, 26.03.2008	–	--
[17]	Commission Decision 2008/231/EC of 1 February 2008 concerning the technical specification of interoperability relating to the operation subsystem of the trans-European high-speed rail system adopted referred to in Article 6(1) of Council Directive 96/48/EC and repealing Commission Decision 2002/734/EC of 30 May 2002	L 84, 26.03.2008	Decision 2010/640/EU L 280, 26.10.2010	--
[18]	Commission Decision 2009/965 of 30 November 2009 on the reference document referred to in Article 27(4) of Directive 2008/57/EC of the European Parliament and of the Council on the interoperability of the rail system within the Community (notified under document C(2009) 8680)	L 341, 22.12.2009	-	-
[19]	Commission Decision 2010/713/EU of 9 November 2010 on modules for the procedures for assessment of conformity, suitability for use and EC verification to be used in the technical specifications for interoperability adopted under Directive 2008/57/EC of the European Parliament and of the Council	L 319, 4.12.2010	--	--

Table 2: Reference documents

Ref.	Document reference	Official Journal	Last modification/ amendment	Version
[20]	Commission Decision 2011/229/EU TSI 'Rolling stock – Noise'	L 99, 13.04.2011	--	--
[21]	Commission Decision 2011/275/EU of 26 April 2011 concerning a technical specification for interoperability relating to the infrastructure subsystem of the trans-European conventional rail system	L126, 14.5.2011	--	--
[22]	Commission Decision 2011/291/EU of 26 April 2011 concerning a technical specification for interoperability relating to the rolling stock subsystem – 'Locomotives and passenger rolling stock'-of the trans-European conventional rail system	L 139, 26.5.2011	Decision 2012/88/EU L 51, 23.2.2012	--
[23]	Commission Decision 2011/314/EU of 12 May 2011 concerning the technical specification for interoperability relating to the 'operation and traffic management' subsystem of the trans-European conventional rail system	L 144, 31.5.2011	--	--
[24]	Commission Implementing Decision 2011/633/EU of 15 September 2011 on the common specifications of the register of railway infrastructure	L 256, 1.10.2011	--	--
[25]	Commission Decision 2011/665/EU of 4 October 2011 on the European register of authorised types of railway vehicles	L 263, 8.10.2011	--	--

Table 2: Reference documents

Ref.	Document reference	Official Journal	Last modification/ amendment	Version
[26]	Commission Decision 2012/88/EU of 25 January 2012 on the technical specification for interoperability relating to the control-command and signalling subsystems of the trans-European rail system	L 51, 23.2.2011	--	--
[27]	Commission Recommendation 2011/217/EU of 29 March 2011 on the authorisation for the placing in service of structural subsystems and vehicles under Directive 2008/57/EC of the European Parliament and of the Council	L 95, 8.4.2011	--	--

3. DEFINITIONS AND ABBREVIATIONS

- 3.1. This Application Guide is intended to be used in conjunction with [25] the ERATV Decision, therefore the definitions included in section 6 of Annex I of this decision are not repeated.
- 3.2. Some of the terms included in the table below are defined in the relevant legal texts; in these cases they are given in italics and in quotation marks, and the source of the definition is indicated.

Table 3: Definitions

Term	Definition/source
Applicant	Depending on the context of the paragraph, this may mean <ul style="list-style-type: none"> - applicant for a verification of conformity with TSIs or NNTR or - applicant for an authorisation of type of vehicle or - applicant for an authorisation for placing in service of a vehicle.
Conformity	Fulfilment of specified requirements by a product, process, service, system, person or body (interpretation of Article R1(12) of Annex 1 of Decision 768/2008/EC). Also included as definition in the TSI Application Guide
Derogation	Exemption from all or part of TSI requirements granted according to Article 9 of [2] the Interoperability Directive.
Designated body (DeBo)	Body designated by a Member State for the assessment of conformity of subsystems to notified national technical rules according to Article 17 or 20 of [2] the Interoperability Directive
National safety authority (NSA)	<i>'national body entrusted with the tasks regarding railway safety in accordance with [the Safety] Directive or any binational body entrusted by Member States with these tasks in order to ensure a unified safety regime for specialised cross-border infrastructures'</i> (Article 3(g) of the Safety Directive)
Notified body (NoBo)	<i>'[a body] which [is] responsible for assessing the conformity or suitability for use of the interoperability constituents or for appraising the 'EC' procedure for verification of the subsystems'</i> (Article 2(j) of [2] the Interoperability Directive)
Open point	Any technical aspects corresponding to the essential requirements that could not be explicitly covered in a TSI and clearly identified in an annex to the TSI according to Article 5(6) of [2] the Interoperability Directive.
Placing in service	<i>'all the operations by which a subsystem or a vehicle is put into its design operating state'</i> (Article 2(q) of the [2] Interoperability Directive)

Table 3: Definitions

Term	Definition/source
Renewal	<i>'any major substitution work on a subsystem or part subsystem, which does not change the overall performance of the subsystem (Article 2(n) of [2] the Interoperability Directive)</i>
Specific case	<i>'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. This may include, in particular, railway lines and networks isolated from the rest of the Community, 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(l) of [2] the Interoperability Directive)</i>
Substitution in the framework of maintenance	<i>'Any replacement of components by parts of identical function and performance in the framework of preventive or corrective maintenance. (Article 2(p) of [2] the Interoperability Directive)</i>
Type and version	<i>'Vehicle type as defined in Article 2(w) of Directive 2008/57/EC. Type must reflect the unit that has been subject of the conformity assessment and authorisation. This unit may be a single vehicle, a rake of vehicles or a trainset'. 'Version of a type as covered by the type examination certificate'. (Section 6 of Annex I of [25] the ERATV Decision).</i> Unless the context clearly indicates otherwise, any reference in this document to a 'type of vehicle' should be construed as 'type and version of vehicle'.
Upgrading	<i>'Any major modification work on a subsystem or part subsystem, which improves the overall performance of the subsystem' (Article 2 (m) of [2] the Interoperability Directive)</i>
Voluntary domain	Product requirements and all actions and activities to comply with, to verify and to attest these requirements, which are required by the customer on a contractual base, but are not required by the state or by a state authority. As in the TSI Guide

Table 4: Abbreviations

ABBREVIATION	FULL TEXT
CCS	Command control and signalling
CR	Conventional rail

Table 4: Abbreviations

ABBREVIATION	FULL TEXT
DeBo	Designated body
ECVVR	European centralised virtual vehicle register
ENE	Energy
ERA	European Railway Agency also called 'the Agency'
ERTMS	European rail traffic management system
ETCS	European train control system
EVN	European vehicle number
GSM-R	Global system for mobile communications – railway
HS	High speed
LOC&PAS	Locomotives and passenger rolling stock
MS	European Union or European Economic Area Member State
NoBo	Notified body
NSA	National safety authority
NVR	National vehicle register
OPE	Operation and traffic management
PRM	Persons with reduced mobility
RINF	Register of infrastructure
RDD	Reference document database established according to Article 27 of the Interoperability Directive
RST	Rolling stock
SRT	Safety in railway tunnels
TSI	Technical specifications for interoperability
WAG	Freight wagons

4. OVERVIEW OF ERATV

4.1. Purpose of ERATV

- 4.1.1. ERATV identifies in a one-to-one manner all types of vehicles authorised for placing in service on the EU rail network (each entry in the register corresponds to only one authorised type of vehicle and each authorised type of vehicle correspond to only one entry in the register).
- 4.1.2. ERATV is intended to serve the following purposes:
1. Allowing the NSAs to simplify the authorisation for placing in service of vehicles which conform to an authorised type. This authorisation should be granted on presentation by the applicant of a declaration of conformity to type. For this purpose, identification of the type in the register must provide a one-to-one reference to the set of technical documentation that describes this type¹.
 2. Facilitating cross-acceptance process by means of providing additional information on the authorised types of vehicle, in particular the list of parameters of RDD (Article 27 of [2] the Interoperability Directive) for which the conformity with the applicable NNTR has been verified.
 3. Allow any organisation interested in running a railway related business (railway undertaking, vehicle owner or keeper, leasing company, etc.) to know which are the vehicle types authorised to be placed in service in each Member State and to give the applicants (if they go for a type that has already been authorised in certain Member States) reasonable certitude of the positive outcome of an application for authorisation of placing in service of a vehicle (in those Member States) (in accordance with Article 26 of [2] the Interoperability Directive);
 4. Allowing the NSAs, national investigation bodies, railway undertakings, infrastructure managers, etc. to retrieve the main technical characteristics of any vehicle authorised to be placed in service.
 5. Allowing the Agency to retrieve information on the types authorised in different Member States distinguishing between TSI conform vehicles and non-TSI conform vehicles (indicating different levels of partial conformity).
 6. Allowing any organisation interested in running a railway related business to assess which vehicle types might be compatible with a particular part of the EU railway network (by means of comparing the characteristics of the vehicle with the data in the Register of Infrastructure). This check does not substitute the provisions of the [17] and [23] TSIs Operation and Traffic Management, particularly its sections 4.2.2.5 "Train composition", 4.2.2.6 "Train braking" and 4.2.2.7. "Ensuring that the train is in running order".

¹ This technical documentation consists of the documents accompanying the type examination certificate for the TSI conform part of the subsystems that constitute the vehicle plus the equivalent documents for the non-TSI conform part of these subsystems.

4.2. Potential users of ERATV

4.2.1. ERATV will be public, so any person will have access to it. Following are the most likely users of ERATV:

- Railway undertakings
- Infrastructure managers
- Vehicle keepers
- Vehicle owners (incl. potential vehicle procurers, leasing companies)
- Manufacturers
- Entities in charge of maintenance
- Notified bodies (NoBos)
- Designated bodies (DeBos)
- National safety authorities (NSAs)
- National investigation bodies
- Registration entities in charge of the NVRs
- ERA
- European Commission

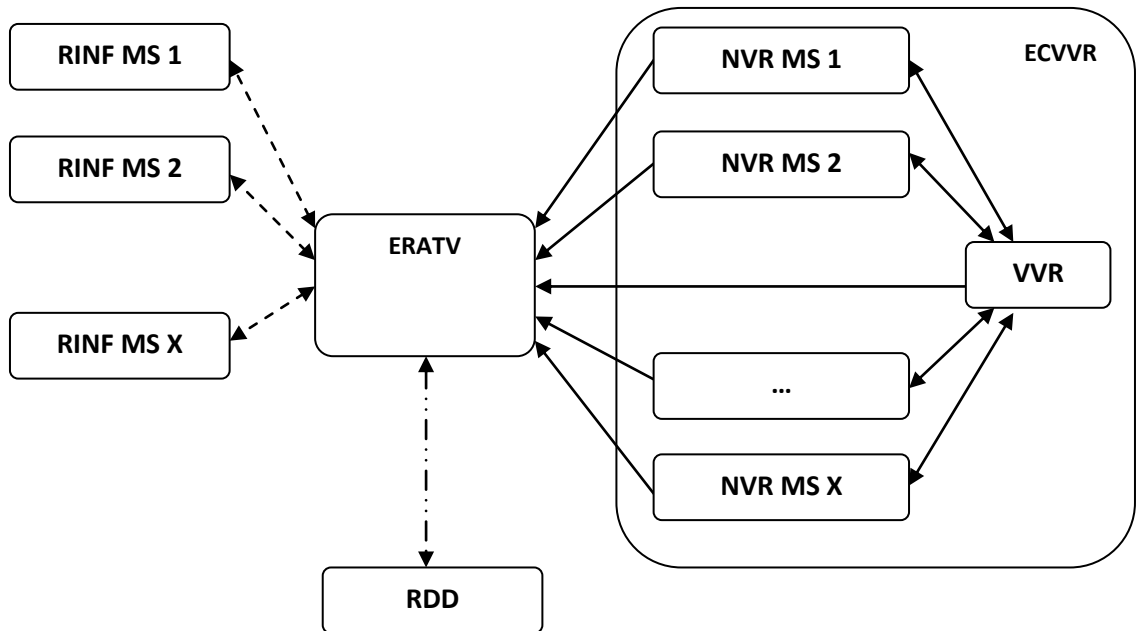
4.3. ERATV and other registers

4.3.1. Introduction

4.3.1.1. ERATV is intended to be used in combination with other registers and databases. In particular it has the following interfaces:

- National vehicle register (NVR) and European centralised virtual vehicle register (ECVVR) set up according to [12] the NVR Decision.
- Register of infrastructure (RINF) set up according to [24] the RINF Decision.
- Reference document database (RDD) set up according to Article 27 of [2] the Interoperability Directive and [18] the Reference Document Decision.

4.3.1.2. Following picture illustrates these interfaces:



4.3.2. Interface between ERATV and NVR

- 4.3.2.1. When a vehicle is registered in an NVR, its type and version (if available) must be indicated (field 5 of the NVR).
- 4.3.2.2. By means of this reference the technical characteristics (parameters in [25] ERATV Decision) of any vehicle may be retrieved from the ERATV.
- 4.3.2.3. In the case of fixed formations, the entire formation should be recorded as a type in the ERATV (what is recorded is the unit subject of verification). In some cases, an EVN the NVR is allocated for each element of the fixed formation. All the elements such fixed formation should indicate the reference of the same type registered in ERATV.

4.3.3. Interface between ERATV and RINF

- 4.3.3.1. Most of the parameters in ERATV are related to the technical compatibility with the network and have their corresponding parameters in RINF. See details in Annex 2.
- 4.3.3.2. By comparing the values in the two registers it is possible to get a preliminary evaluation of the technical compatibility of a vehicle type with a given line. Such evaluation may be used as a first step for planning purposes.
- 4.3.3.3. No final conclusion on technical compatibility can be drawn on the basis of the information in the registers. In particular such check does not substitute the provisions of the [17] [23] TSIs Operation and Traffic Management, particularly its sections 4.2.2.5 “Train composition”, 4.2.2.6 “Train braking” and 4.2.2.7 “Ensuring that the train is in running order”.

4.3.4. Interface between ERATV and RDD

- 4.3.4.1. For each vehicle type ERATV provides information on the verifications of conformity with NNTR carried out (the NNTR are applicable for non-TSI conform vehicles, open points in the TSIs and specific cases that make reference to these rules).
- 4.3.4.2. This indication is provided in ERATV parameter 3.1.3.1.5 by means of reference to the parameters defined in RDD.
- 4.3.4.3. For the parameters that have been verified for conformity with the NNTR of MS “X” the cross-acceptance principle apply. That is, these parameters do not need to be verified in any other MS “Y”, if the rules of MSs “X” and “Y” are considered equivalent (classified as “A”).

4.4. Configuration of ERATV

- 4.4.1. ERATV is hosted by ERA. No data are stored locally at the NSAs.
- 4.4.2. The data are input to the ERATV by the NSAs and made public by ERA.
- 4.4.3. ERATV is public. It may be accessed by means of a standard internet connection. Neither user account nor any other kind of registration is necessary for accessing data of ERATV.

4.5. Stages in implementation of ERATV

- 4.5.1. [25] The ERATV Decision is applicable from 15 April 2012 (according to Article 6 of [25] the ERATV Decision). This means that from this date on NSAs have to inform the Agency about type authorisations they have granted.
- 4.5.2. According to Article 2(6) of [25] the ERATV Decision, until the ERATV IT system is operational *“the Agency shall publish the information relating to the authorised types of vehicles on its website”*.
- 4.5.3. For facilitating the collection and submission of information and having the data in a harmonised format, the Agency prepared the attached form.
- 4.5.4. The ERATV IT system, which will include a tool for submission of data by NSAs, will be in operation by 31 December 2012.

4.6. Actors

Table 5: Actors involved in registration of vehicles in ERATV

Actors	Roles and responsibilities
Applicant for a verification of conformity	Prepares a file with the set of data required for ERATV (sections 1, 2 and 4 and field 3.1.3.1.5 of the list) and submits it to NoBo and/or DeBo as part of application for verification.
Notified body	Verifies the data submitted by the applicant as far as the parameters are verified for conformity with the TSIs.
Designated body	Verifies the data submitted by the applicant as far as the parameters are verified for conformity with the NNTRs.
Applicant for an authorisation of type of vehicle	Submits the set of data required for ERATV to the NSA of the MS where the type authorisation is sought.
National safety authority	<p>Complements the data submitted by the applicant by the data related to the authorisation (section 3 of the list)</p> <p>Informs ERA about types of vehicles it authorised and transmits the data for publication.</p> <p>In the cases of modification of a type authorised in more than one MS, coordinates the decision with the NSAs of other MS where the type is authorised.</p>
ERA	<p>Hosts the ERATV.</p> <p>Checks the data transmitted by the NSA for compliance with the ERATV specification and publishes them.</p>

5. TYPES OF VEHICLE TO BE REGISTERED IN ERATV

- 5.1. Any type of vehicle authorised in an EEA MS (in an EU MS or Norway) following a national legal act transposing Article 26 of [2] the Interoperability Directive must be registered in ERATV. This concerns both TSI-conform and non-TSI conform vehicles.
- 5.2. Section 1 of Annex I of [25] the ERATV Decision indicates the cases that are subject to voluntary registration in ERATV.

6. NUMBERING OF TYPES IN ERATV

6.1. Introduction

6.1.1. The number of type is structured according to Annex III of [25] the ERATV Decision.

6.1.2. The indication of the family/platform (field 2 of the number) is for user-friendliness only. An indication to which family/platform a type belongs should be done following the indication of the manufacturer.

6.2. Work flow with reservation of a number by an NSA

6.2.1. The steps in registration of a type with reservation of a number by an NSA are as follows:

1. The NSA initiates the registration indicating some basic data that are necessary for attributing a type number.
2. The NSA reserves a type number, which is generated according to Annex III of [25] the ERATV Decision.
3. The NSA completes the registration and sends data to ERA.
4. ERA verifies the data for conformity with [25] the ERATV Decision and publishes the new type with the number reserved by the NSA in step 2.

6.2.2. These two first steps may be taken by the NSA before or after granting the type authorisation. If this way, the type number is available from the very moment the type authorisation has been granted and it may be used for both the registration of vehicles in the NVR and in the declarations of conformity to type to be established by the applicant.

6.3. Work flow without reservation of a number by an NSA

6.3.1. The steps in registration of a type without reservation of a number by an NSA are as follows:

1. The NSA initiates and completes the registration and sends data to ERA.
2. ERA verifies the data for conformity with [25] the ERATV Decision assigns the type a number and publishes it.

6.3.2. If this case, the type number is only available some days (up to 40 working days) after the type authorisation has been granted. If in the meantime any vehicles were registered in the NVR or any declarations of conformity to type were established these registrations or declarations should be complemented with type number once it is available.

7. DATA TO BE RECORDED IN ERATV

7.1. Structure of data

7.1.1. For each vehicle type, the data are structured in four groups:

0. Identification of the type
1. General information
2. Conformity with the TSIs (including specific cases)
3. Authorisations
4. Technical characteristics of the vehicle

7.1.2. Groups 0, 1, 2 (except conformity with the specific cases) and 4 present information that is common for all the MS. It is introduced by the NSA that was the first to grant an authorisation to this type vehicle.

7.1.3. Group 3 presents information that is specific for each MS where the vehicle is authorised. This information, as well as conformity with the relevant specific cases, is introduced by each NSA as far as authorisation granted by this NSA is concerned.

7.1.4. Following picture gives an example of data for a type authorised in four MS, being the NSA of MS A the one that granted the first authorisation.

Data introduced by NSA MS A	Data introduced by NSA MS B	Data introduced by NSA MS C	Data introduced by NSA MS D
0. Identification of the type			
1. General information			
2. Conformity with the TSIs (including conformity with specific cases of MS A)	Only conformity with specific cases of MS B	Only conformity with specific cases of MS C	Only conformity with specific cases of MS D
3. Authorisations Information about type authorisation in MS A	3. Authorisations Information about type authorisation in MS B	3. Authorisations Information about type authorisation in MS C	3. Authorisations Information about type authorisation in MS D
4. Technical characteristics of the vehicle			

7.1.5. Annex 1 of this Guide provides more detailed guidance for the data to be recorded for each parameter.

7.2. Registering different values depending on wheelset gauge, power supply system and on-board CCS

- 7.2.1. In the case dual gauge or multi-power supply system rolling stock or vehicles fitted with various on-board CCS systems, for certain parameters the value may depend on the wheel set gauge, power supply or CCS system.
- 7.2.2. In these cases the values must be recorded for the different possible combinations of wheel set gauge, power supply or CCS system.

7.3. Registering different values depending on the operating mode

- 7.3.1. In the case where a vehicle has different operating modes (for example, a locomotive that can be used in freight or passenger mode), the values for each mode should be registered.

7.4. Correspondence between ERATV parameters and clauses of the TSIs

- 7.4.1. As indicated in Annex II of [25] the ERATV Decision, “where a parameter is defined in the applicable TSI, the value indicated for the parameter shall be the one assessed in the verification procedure”. Annex 1 of this Guide provides for each parameter the references to the relevant TSI clauses, as well as other guidance.
- 7.4.2. If the parameter has not been verified for conformity with the TSIs, but has been verified for conformity with the applicable NNTR instead, the value to be indicated in ERATV is the one that corresponds to the verification of conformity with the NNTR.
- 7.4.3. In this respect it should be reminded that a vehicle may consist of one or two subsystems. That is, rolling stock subsystem only (as it is the case of vehicles without a driving cab, such as freight wagons or passenger coaches) or rolling stock and on-board CCS subsystems (as it is the case of vehicles with a driving cab, such as locomotives or fixed trainsets). In the case of types of vehicle in conformity with the first set of HS TSIs (year 2002), the pantograph was considered as a part of the Energy subsystem.
- 7.4.4. In addition, several TSIs may be applicable to each subsystem.
- 7.4.5. For any type of vehicle the version of the TSIs against which it has been assessed must be indicated. This includes indication of any amendments of the TSI.

7.4.6. The following table provides an overview of the TSIs applicable to the vehicle related subsystems:

Table 6: TSIs applicable to the vehicle related subsystems

Subsystem	Applicable TSIs	Comments
Rolling Stock	[6] HS RST TSI Decision 2002/735/EC	Repealed, but may be applicable during a transitional period
	[16] HS RST TSI Decision 2008/232/EC	
	[22] CR LOC&PAS TSI Decision 2011/291/EU amended by Decision 2012/88/EU	Amended (applicable from 27 July 2012)
	[11] WAG TSI Decision 2006/861/EC amended by Decision 2009/107/EC	
	[8] Noise TSI Decision 2006/66/EC	Repealed, but may be applicable during a transitional period
	[20] Noise TSI Decision 2011/229/EU	
	[14] SRT TSI Decision 2008/163/EC amended by Decision 2011/291/EU	
On-board Control-Command and Signalling	[15] PRM TSI Decision 2008/164/EC	
	[5] HS CCS TSI Decision 2002/731/EC amended by Decision 2004/447/EC	Repealed, but may be applicable during a transitional period
	[9] HS CCS Decision 2006/860/EC amended by Decision 2007/153/EC Decision 2008/386/EC Decision 2010/79/EC	Repealed (application from 27 July 2012), but may be applicable during a transitional period
	[10] CR CCS Decision 2006/679/EC amended by Decision 2006/860/EC Decision 2007/153/EC Decision 2008/386/EC Decision 2009/561/EC Decision 2010/79/EC	Repealed (application from 27 July 2012), but may be applicable during a transitional period
Energy	[26] CCS Decision 2012/88/EU	Application from 27 July 2012
Energy	[7] HS ENE 2002 Decision 2002/733/EC	Repealed, but may be applicable during a transitional period

7.4.7. ERATV is intended to reflect the results of the verification and authorisation processes and does not impose in itself any parameters to be verified.

7.4.8. There may be cases where some parameters have not been verified because they are not specified in the rules relevant for authorisation. In these cases, the values for these parameters do not need to be recorded in ERATV.

7.5. Changes of the data in ERATV

- 7.5.1. According to Article 34 of [2] the Interoperability Directive, the NSAs must inform ERA about any modifications, suspensions and withdrawals of an authorisation they had granted.
- 7.5.2. Normally a change should not contain a technical change of the type of vehicle itself; it should only contain change of some data of the authorisation.
- 7.5.3. If there is a technical change in the vehicle itself that required an authorisation from an NSA, it should normally be regarded as new type or version.
- 7.5.4. A renewal or upgrading that modifies the design technical characteristics of the vehicle creates a new type or a new version.
- 7.5.5. Any substitution in the framework of maintenance should not result in a change in the design technical characteristics of the vehicle and should have no impact on the registration in ERATV.
- 7.5.6. However, there may be certain situations where a change is related to the technical characteristics. These situations include the following:
- A parameter that had not been verified at the moment of the original type authorisation and registration was verified afterwards and its value needs to be recorded. This may in particular be relevant if this parameter is not relevant in the Member State that granted the first authorisation (for example, a class B CCS system not used in this Member State).
 - A remedial action because of a deficiency in the design was necessary.
- 7.5.7. In any case if there is a modification to the data other than those strictly related to section 3 “authorisation” or specific cases, the NSA that intends to introduce this modification must agree it with all other NSAs that authorised this type of vehicle (section 5.2.8 of Annex I of [25] the ERATV Decision). The NSAs of the MS where the process of authorisation is on-going should also be consulted.
- 7.5.8. If no agreement is reached among the relevant NSAs, the NSA that intends to introduce the change is not allowed to introduce it. It may create another type or version instead.
- 7.5.9. Agreement between all the NSAs that authorised the type must be reached before the modification is communicated to ERA. However, ERA should be informed when the process is initiated.

8. LIST OF ANNEXES

1. Detailed comments on the ERATV parameters
2. Correspondence between ERATV and RINF parameters

(See the Agency website for the latest available versions of the annexes, useful Internet links and addresses and frequently asked questions.)

ANNEX 1 DETAILED COMMENTS ON THE ERATV PARAMETERS

This annex includes detailed comments on the ERATV parameters, in particular reference to the clauses of the TSIs that state the requirements for the ERATV parameters.

In Table 7 the reference to the TSI should be construed as indicated in Table 6.

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
0	Identification of the type	This section is filled in when the type or version is registered for the first time.
0.1	TYPE ID	These two fields are managed as one single field.
0.2	Versions included in this type	See definitions of type and version in Section 6 Glossary of Annex I of [25] the ERATV Decision. Code assigned to type and version by ERA according to Annex III of [25] the ERATV Decision. An NSA may reserve a type/version number, so that it is available from the moment the type authorisation is granted. This ID of type and version is one that should be indicated in the NVR (field 5).
0.3	Date of record in ERATV	This parameter is automatically generated by the system when the type data are published. It should not be mixed with the date of type authorisation (field 3.1.3.1.1)
1	General information	
1.1	Type name	Type name as defined by the manufacturer
1.2	Alternative type name	Alternative type name as defined by the manufacturer
1.3	Manufacturer's name	See definition of manufacturer in Section 6 Glossary of Annex I of [25] the ERATV Decision.
1.4	Category	These two fields are managed as one single field.
1.5	Subcategory	Vehicle category and subcategory as defined in Annex III of [25] the ERATV Decision.
2	Conformity with TSIs	
2.1	Conformity with TSI	The exact reference of the TSIs conformity with which has been verified should be indicated. This includes the version of the TSI and its possible amendments. Conformity (or partial conformity) must be attested by an EC Type Examination Certificate (module SB) or Design verification certificate (module SH1) as defined in [19] the Decision on Modules or, for TSI adopted before 2010, in the applicable TSI itself. If not, the vehicle is deemed to be non-TSI conform. "Yes" means the type of vehicle is fully in conformity with the given TSI.

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
2.2	Reference of "EC type examination certificates" (if module SB applied) and/or "design verification certificate" (if module SH1 applied)	
2.3	Applicable specific cases (specific cases conformity with which has been assessed)	Specific cases the type of vehicle is in conformity with (conformity must be attested by verification procedure). This section is filled in by each NSA that granted an authorisation to this type of vehicle.
2.4	Sections of TSI not complied with	This parameter must be filled in in the cases of partial conformity with a TSI. Sections of TSI the type of vehicle is not in conformity with (e.g. in the case of a derogation, partial application of TSI in the case of renewal or upgrading, etc.).
3	Authorisations	This section is Member State specific. It is filled in by each NSA that granted an authorisation to this type of vehicle. If a type is or was authorised in several Member States the information required in this section is presented for each of these Member States separately.
3.1	Authorisation in	
3.1.1	Member State of authorisation	Member State that granted the authorisation for the given type of vehicle
3.1.2	Current status	
3.1.2.1	Status	This parameter is automatically generated by the system depending on the information provided by the NSA. The meaning of the different statuses is as follows: <ul style="list-style-type: none"> - "Active" means the authorisation of type is valid, according to Article 26(3) of [2] the Interoperability Directive "a vehicle which conforms to [this type] shall be authorised by [the Member State that authorised the type] on the basis of declaration of conformity to type without further checks" - "Suspended" means the authorisation is temporarily not valid but may be reactivated in the future (for example, when an investigation has been concluded), see definitions in section 6 of Annex I of [25] the ERATV Decision. - "Withdrawn" means the authorisation is not valid, see definitions in section 6 of Annex I of [25] the ERATV Decision. - "Expired" means the authorisation is not valid, because its had a temporary validity. The fact that a type authorisation is not valid means no new vehicles of this type may be placed in service, but it has no effect on the authorisations for placing in service already granted.

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
3.1.2.2	Validity of authorisation (if defined)	Last day on which the authorisation is valid
3.1.2.3	Coded restrictions	Restrictions as indicated in the authorisation of type. ERA maintains a single document with restriction codes applicable for both NVR and ERATV. Refer to Technical document ERA-TD-2011-09-INT for more information.
3.1.2.4	Non-coded restrictions	Restrictions as indicated in the authorisation of type Refer to Technical document ERA-TD-2011-09-INT for more information.
3.1.3	Historical	
3.1.3.1	Original authorisation	
3.1.3.1.1	Date	Date on which the authorisation was actually granted (not the date of entry in ERATV).
3.1.3.1.2	Authorisation holder	See definition of authorisation holder in Section 6 Glossary of Annex I of [25] the ERATV Decision.
3.1.3.1.3	Authorisation document reference	The authorisation document should be codified as indicated in Appendix 2 of [12] the NVR Decision (code of document 59).
3.1.3.1.4	National certificate references (if applicable)	
3.1.3.1.5	Parameters for which conformity to applicable national rules has been assessed	List of parameters as defined in [18] Commission Decision 2009/965/EC on the occasion of the original type authorisation in this MS
3.1.3.1.6	Comments	
3.1.3.X	Modification of authorisation	Under this heading information on modifications, suspensions, reactivations and withdrawals of the authorisation is indicated.
3.1.3.X.1	Type of modification	The possible values are “suspension”, “reactivation”, “withdrawal” or “modification”.
3.1.3.X.2	Date	Date on which the authorisation or its status was actually modified (not the date of entry in ERATV).
3.1.3.X.3	Authorisation holder (if applicable)	See definition of authorisation holder in Section 6 Glossary of Annex I of [25] the ERATV Decision.
3.1.3.X.4	Authorisation modification document reference	The authorisation document should be codified as indicated in Appendix 2 of [12] the NVR Decision (code of document 59).
3.1.3.X.5	National certificate references (if applicable)	
3.1.3.X.6	Applicable national rules (if applicable)	List of parameters (as defined in [18] Commission Decision 2009/965/EC) for which conformity to national rules has been assessed on the occasion of this modification of the authorisation

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
3.1.3.X.7	Comments	
4	Technical characteristics of the vehicle	
4.1	General technical characteristics	
4.1.1	Number of driving cabs	
4.1.2	Speed	
4.1.2.1	Maximum design speed	<p>Conventional locomotives and passenger rolling stock:</p> <ul style="list-style-type: none"> - 4.2.8.1.2 of Loc&Pas TSI 2011 <p>Wagons:</p> <ul style="list-style-type: none"> - 4.2.3.4 of Wag TSI 2006 <p>On board CCS subsystem:</p> <ul style="list-style-type: none"> - 6.2.2.3.1 of HS CCS TSI 2006 - 6.2.2.3 of CR CCS TSI 2006 - 4.2.2 of CCS TSI 2012 <p>If a vehicle is composed of several subsystems, the design speed of the vehicle is the lowest design speed of different subsystems the vehicle is composed of.</p>
4.1.2.2	Maximum speed when empty	<p>Wagons:</p> <ul style="list-style-type: none"> - 4.2.3.4 of Wag TSI 2006
4.1.3	Wheel set gauge	<p>Track gauge for which the vehicle has been assessed.</p> <p>Conventional locomotives and passenger rolling stock:</p> <ul style="list-style-type: none"> - 4.2.3.5.2.1 of Loc&Pas TSI 2011 <p>High speed rolling stock:</p> <ul style="list-style-type: none"> - 4.2.10 of HS RST TSI 2002 or - 4.2.3.4.9.1 of HS RST TSI 2008 <p>Wagons:</p> <ul style="list-style-type: none"> - Annex E of Wag TSI 2006
4.1.4	Conditions of use regarding train formation	<p>Conventional locomotives and passenger rolling stock:</p> <ul style="list-style-type: none"> - 4.1.2 of Loc&Pas TSI 2011
4.1.5	Maximum number of trainsets or locomotives coupled together in multiple operation.	<p>Conventional locomotives and passenger rolling stock:</p> <ul style="list-style-type: none"> - 4.1.2 of Loc&Pas TSI 2011 <p>High speed rolling stock:</p> <ul style="list-style-type: none"> - 4.1.3 of HS RST TSI 2002 or - 4.2.1.2 (c&d) of HS RST TSI 2008 <p>This parameter reflects the verification carried out by a NoBo. There may be additional restrictions at the MS level, which if applicable have to be indicated in 3.X.2.3 or 3.X.2.4.</p>

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.1.6	Number of elements in the rake of freight wagons (only for subcategory "rake of freight wagons")	
4.1.7	Letter marking	Wagons: According to Annex P of OPE TSI. This parameter is not assessed by NoBo.
4.1.8	Type meets the requirements necessary for validity of the vehicle authorisation granted by one Member State in other Member States	At present this case only includes wagon in conformity with: - 7.6.4 of Wag TSI 2006
4.1.9	Dangerous goods for which the vehicle is suitable (tank code)	
4.1.10	Structural category	Structural category according to EN12663-1:2010, EN12663-2:2010 or EN12663:2000. Conventional locomotives and passenger rolling stock: - 4.2.2.4 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.2.3.3 of HS RST TSI 2008 Wagons: - 4.2.2.3.1 and Annex ZZ of Wag TSI 2006
4.2	Vehicle kinematic gauge	
4.2.1	Vehicle kinematic gauge (interoperable gauge)	Conventional locomotives and passenger rolling stock: - 4.2.3.1 of Loc&Pas TSI 2011 High speed rolling stock: - Annex G of HS RST TSI 2002 or - 4.2.3.1 of HS RST TSI 2008 Wagons: - 4.2.3.1. of Wag TSI 2006
4.2.2	Vehicle kinematic gauge (other gauges assessed using the kinematic method)	Other gauges (defined in Annex C of Wag TSI 2006 and EN 15273-2:2009)

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.3	Environmental conditions	
4.3.1	Temperature range	Conventional locomotives and passenger rolling stock: - 4.2.6.1.2 of Loc&Pas TSI 2011 (Range according to EN 50125-1:1999 clause 4.3) High speed rolling stock: - 4.3.12 of HS RST TSI 2002 or - 4.2.6.1 of HS RST TSI 2008 Wagons: - 4.2.6.1.2.2. of Wag TSI 2006
4.3.2	Altitude range	Conventional locomotives and passenger rolling stock: - 4.2.6.1.1 of Loc&Pas TSI 2011 (Range according to EN 50125-1:1999 clause 4.2, in case of category AX the relevant value in meters has to be indicated)
4.3.3	Snow, ice and hail conditions	Conventional locomotives and passenger rolling stock: - 4.2.6.1.5 of Loc&Pas TSI 2011 (According to EN 50125-1:1999 clause 4.6)
4.3.4	Ballast pick up (for v≥190km/h vehicles only)	
4.4	Fire safety	
4.4.1	Fire safety category	Conventional locomotives and passenger rolling stock: - 4.2.10.1.1 and 4.2.10.1.2 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.7.2 of HS RST TSI 2008
4.5	Design mass and loads	
4.5.1	Permissible payload for different line categories	Wagons: - Annex D of Wag TSI 2006 For rakes, payload for each element of the rake is indicated.
4.5.2	Design mass	
4.5.2.1	Design mass in working order	Conventional locomotives and passenger rolling stock: - 4.2.2.10 of Loc&Pas TSI 2011(EN 15663:2009)
4.5.2.2	Design mass under normal payload	Conventional locomotives and passenger rolling stock: - 4.2.2.10 of Loc&Pas TSI 2011(EN 15663:2009) For wagons this is the maximum payload.
4.5.2.3	Design mass under exceptional payload	Conventional locomotives and passenger rolling stock: - 4.2.2.10 of Loc&Pas TSI 2011(EN 15663:2009)

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.5.3	Static axle load	
4.5.3.1	Static axle load in working order	Conventional locomotives and passenger rolling stock: - 4.2.3.2.1 of Loc&Pas TSI 2011 (Highest individual axle load for the load case).
4.5.3.2	Static axle load under normal payload/ maximum payload for freight wagons	Conventional locomotives and passenger rolling stock: - 4.2.3.2.1 of Loc&Pas TSI 2011 (Highest individual axle load for the load case).
4.5.3.3	Static axle load under exceptional payload	Conventional locomotives and passenger rolling stock: - 4.2.3.2.1 of Loc&Pas TSI 2011 (Highest individual axle load for the load case).
4.5.4	Quasi-static guiding force (if exceeds the limit defined in TSI or not defined in the TSI)	Conventional locomotives and passenger rolling stock: - 4.2.3.4.2.2 of Loc&Pas TSI 2011
4.6	Rolling stock dynamic behaviour	
4.6.1	Cant deficiency (maximum uncompensated lateral acceleration) for which the vehicle has been assessed	Conventional locomotives and passenger rolling stock: - 4.2.3.4.2.2 of Loc&Pas TSI 2011 (planned permissible cant deficiency as defined in EN 14363:2005)
4.6.2	Vehicle equipped with a cant deficiency compensation system ("tilting vehicle")	Conventional locomotives and passenger rolling stock: - 4.2.3.4.2 of Loc&Pas TSI 2011
4.6.3	In service limits of equivalent conicity (or worn wheel profile) for which the vehicle has been tested	
4.7	Braking	
4.7.1	Maximum train deceleration	Conventional locomotives and passenger rolling stock: - 4.2.4.5.1 of Loc&Pas TSI 2011 High speed rolling stock: - 4.1.5 of HS RST TSI 2002 or
4.7.2	Service braking	
4.7.2.1	Brake performance on steep gradients with normal payload	High speed rolling stock: - 4.2.4.7 of HS RST TSI 2008
4.7.2.1.1	Reference case of TSI	Conventional locomotives and passenger rolling stock: - 4.2.4.5.4 of Loc&Pas TSI 2011 Wagons - 4.2.4.1.2.5 of Wag TSI 2006
4.7.2.1.2	Speed (if no reference case is indicated)	Ditto

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.7.2.1.3	Gradient (if no reference case is indicated)	Ditto
4.7.2.1.4	Distance (if no reference case is indicated)	Ditto
4.7.2.1.5	Time (if distance is not indicated) (if no reference case is indicated)	Ditto
4.7.3	Parking brake	
4.7.3.1	All vehicles of this type must be equipped with a parking brake (parking brake mandatory for vehicles of this type)	Wagons: - 4.2.4.1.2.8 of Wag TSI 2006
4.7.3.2	Parking brake type (if the vehicle is fitted with it)	
4.7.3.3	Maximum gradient on which the unit is kept immobilized by the parking brake alone (if the vehicle is fitted with it)	Conventional locomotives and passenger rolling stock: - 4.2.4.5.5 of Loc&Pas TSI 2011 (under design mass in working order) Wagons: - 4.2.4.1.2.8 of Wag TSI 2006 (under normal payload)
4.7.4	Braking systems fitted on the vehicle	
4.7.4.1	Eddy current brake	
4.7.4.1.1	Eddy current brake fitted	Conventional locomotives and passenger rolling stock: - 4.2.4.8.3 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.15 of HS RST TSI 2002 or - 4.2.4.5 of HS RST TSI 2008
4.7.4.1.2	Possibility of preventing the use of the eddy current brake (only if fitted with eddy current brake)	Conventional locomotives and passenger rolling stock: - 4.2.4.8.3 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.15 of HS RST TSI 2002 or - 4.2.4.5 of HS RST TSI 2008
4.7.4.2	Magnetic brake	
4.7.4.2.1	Magnetic brake fitted	Conventional locomotives and passenger rolling stock: - 4.2.4.8.2 of Loc&Pas TSI 2011

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.7.4.2.2	Possibility of preventing the use of the magnetic brake (only if fitted with magnetic brake)	Conventional locomotives and passenger rolling stock: - 4.2.4.8.3 of Loc&Pas TSI 2011 High speed rolling stock: - 4.1.5 of HS RST TSI 2002 or - 4.2.4.1 of HS RST TSI 2008
4.7.4.3	Regenerative brake (only for vehicles with electrical traction)	
4.7.4.3.1	Regenerative brake fitted	Conventional locomotives and passenger rolling stock: - 4.2.8.2.3 of Loc&Pas TSI 2011 High speed rolling stock: - 4.1.6.1.2 of HS RST TSI 2002 or - 4.2.8.3.1.2 of HS RST TSI 2008
4.7.4.3.2	Possibility of preventing the use of the regenerative brake (only if fitted with regenerative brake)	Conventional locomotives and passenger rolling stock: - 4.2.4.8.3 of Loc&Pas TSI 2011 High speed rolling stock: - 4.1.6.1.2 of HS RST TSI 2002 or - 4.2.4.8 of HS RST TSI 2008
4.8	Geometrical characteristics	
4.8.1	Vehicle length	For vehicles fitted with automatic or semi-permanent coupling: length over couplings For vehicles fitted with buffers: length over buffers
4.8.2	Minimum in-service wheel diameter	The value for this parameter must be the same as the one for parameter 4.14.2.6. Minimum diameter considering wear for which the vehicle has been designed and tested. Conventional locomotives and passenger rolling stock: - 4.2.3.5.2.1 of Loc&Pas TSI 2011. High speed rolling stock: - 4.2.10 (c) of HS RST TSI 2002 or - Annex M of HS RST TSI 2008 Wagons: - Annex L of Wag TSI 2006
4.8.3	Shunting restrictions	

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.8.4	Minimum horizontal curve radius capability	Minimum horizontal curve radius for which the vehicle has been assessed. Conventional locomotives and passenger rolling stock: - 4.2.3.6 of Loc&Pas TS 2011. High speed rolling stock: - 4.2.18 of HS RST TSI 2002 or - 4.2.3.7 of HS RST TSI 2008
4.8.5	Minimum vertical convex curve radius capability	Minimum vertical convex curve radius for which the vehicle has been designed (for shunting humps). This parameter is not assessed by a NoBo.
4.8.6	Minimum vertical concave curve radius capability	Minimum vertical concave curve radius for which the vehicle has been designed (for shunting humps). This parameter is not assessed by a NoBo.
4.8.7	Height of loading platform (for flat wagons and combined transport)	Height of loading platform (for flat wagons and combined transport) for which the vehicle is designed. This parameter is not assessed by a NoBo.
4.8.8	Suitability for transport on ferries	Wagons: - 5.4.2.1. of Wag TSI 2006 This parameter is not assessed by a NoBo for Loc&Pas
4.9	Equipment	
4.9.1	Type of end coupling (indicating tensile and compressive forces)	Conventional locomotives and passenger rolling stock - 4.2.2.2.3 of Loc&Pas TSI 2011 and Annex A (for manual coupling) High speed rolling stock: - 4.2.9 of HS RST TSI 2002 or - 4.2.2.2 of HS RST TSI 2008 Wagons - 4.2.2.1 of Wag TSI 2006 Depending on the applicable TSI, the type of coupling is not necessarily assessed by the NoBo.
4.9.2	Axle bearing condition monitoring (hot axles box detection)	Conventional locomotives and passenger rolling stock - 4.2.3.3.2 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.11 of HS RST TSI 2002 - 4.2.3.3.2 of HS RST TSI 2008 Wagons - 4.2.3.3.2 of Wag TSI 2006 "Other" means "line side" not in conformity with the clauses above and not assessed by a NoBo.

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.9.3	Flange lubrication	
4.9.3.1	Flange lubrication fitted	Conventional locomotives and passenger rolling stock: - 7.5.3.1 of Loc&Pas TSI 2011 (not assessed by a NoBo) High speed rolling stock: - 4.2.16 of HS RST TSI 2002 or - 4.2.3.8 of HS RST TSI 2008
4.9.3.2	Possibility of preventing the use of the lubrication device (only if fitted with flange lubrication)	Not assessed by a NoBo
4.10	Energy supply	
4.10.1	Energy supply system	Autonomous includes thermal, batteries for traction purposes, etc. Electrical power supply systems as defined in EN 50163:2004 (unless indicated otherwise)
4.10.2	Maximum power (to be indicated for each energy supply system the vehicle is equipped for)	This parameter refers to the electrical power of the unit (including the auxiliary services). Conventional locomotives and passenger rolling stock: - 4.2.8.2.4 of Loc&Pas TSI 2011 High speed rolling stock: - 4.1.6.2 of HS RST TSI 2002 or - 4.2.8.3.2. of HS RST TSI 2008
4.10.3	Maximum rated current from the catenary (to be indicated for each electrical energy supply system the vehicle is equipped for)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.4 of Loc&Pas TSI 2011 High speed rolling stock: - 4.1.6.2 of HS RST TSI 2002 or - 4.2.8.3.2. of HS RST TSI 2008
4.10.4	Maximum current at standstill per pantograph (to be indicated for each DC systems the vehicle is equipped for)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.5 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.3 of HS RST TSI 2002
4.10.5	Height of interaction of pantograph with contact wires (over top of rail) (to be indicated for each energy supply system the vehicle is equipped for)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.9.1.1 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.8.3.6.2 and 4.2.8.3.6.9 of HS RST TSI 2008

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.10.6	Pantograph head (to be indicated for each energy supply system the vehicle is equipped for)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.9.2 of Loc&Pas TSI 2011(EN 50367:2006) High speed rolling stock: - 4.2.8.3.7.2 of HS RST TSI 2008 High speed energy: - Annex Q of HS ENE 2002
4.10.7	Number of pantographs in contact with the overhead contact line (OCL) (to be indicated for each energy supply system the vehicle is equipped for)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.9.7 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.8.3.6.2 of HS RST TSI 2008
4.10.8	Shortest distance between two pantographs in contact with the OCL (to be indicated for each energy supply system the vehicle is equipped for; to be indicated for single and, if applicable, multiple operation) (only if number of raised pantographs is more than 1)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.9.7 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.8.3.6.2 of HS RST TSI 2008
4.10.9	Type of OCL used for the test of current collection performance (to be indicated for each energy supply system the vehicle is equipped for) (only if number of raised pantographs is more than 1)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.9.7 of Loc&Pas TSI 2011 -
4.10.10	Material of pantograph contact strip the vehicle may be equipped with (to be indicated for each energy supply system the vehicle is equipped for)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.9.4 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.8.3.8.3 of HS RST TSI 2008
4.10.11	Automatic dropping device (ADD) fitted (to be indicated for each energy supply system the vehicle is equipped for)	Conventional locomotives and passenger rolling stock: - 4.2.8.2.9.10 of Loc&Pas TSI 2011 High speed rolling stock: - 4.2.8.3.6.4 of HS RST TSI 2008 High speed energy: - 5.3.2.8 of HS ENE 2002

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.10.12	TSI conform energy meter for billing purposes installed on board	Conventional locomotives and passenger rolling stock: - 4.2.8.2.8 of Loc&Pas TSI 2011
4.11	Noise related characteristics	
4.11.1	Pass-by noise level (dB(A))	- 4.2 of Noise TSI 2006 or - 4.2 of Noise TSI 2011
4.11.2	Pass-by noise level was measured under reference conditions	Annex A.1.4 of Noise TSI 2006 or - 4.2.1.1 of Noise TSI 2011
4.11.3	Stationary noise level (dB(A))	- 4.2 of Noise TSI 2006 or - 4.2 of Noise TSI 2011
4.11.4	Starting noise level (dB(A))	- 4.2 of Noise TSI 2006 or - 4.2 of Noise TSI 2011
4.12	Passenger related characteristics	
4.12.1	General passenger related characteristics	
4.12.1.1	Number of fixed seats	This parameter is not assessed by a NoBo
4.12.1.2	Number of toilets	This parameter is not assessed by a NoBo
4.12.1.3	Number of sleeping places	This parameter is not assessed by a NoBo
4.12.2	PRM related characteristics	
4.12.2.1	Number of priority seats	- 4.2.2.2.2 of PRM TSI 2008
4.12.2.2	Number of wheelchair spaces	- 4.2.2.3 of PRM TSI 2008
4.12.2.3	Number of PRM accessible toilets	- 4.2.2.6.3 of PRM TSI 2008
4.12.2.4	Number of wheelchair accessible sleeping places	- 4.2.2.11 of PRM TSI 2008
4.12.3	Passenger access and egress	
4.12.3.1	Platform heights for which the vehicle is designed.	- 4.2.2.12 of PRM TSI 2008 (including any specific cases)
4.12.3.2	Description of any integrated boarding aids (if provided)	- 4.2.2.12.4 of PRM TSI 2008

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.12.3.3	Description of any portable boarding aids if considered in the design of the vehicle for meeting the PRM TSI requirements	- 4.2.2.12.3 of PRM TSI 2008
4.13	On-board CCS equipment (for vehicles with a driving cab only)	
4.13.1	Signalling	
4.13.1.1	ETCS equipment on-board and its level	
4.13.1.2	ETCS baseline.version (x.y). If the version is not fully compatible it shall be indicated in brackets	<p>The baselines and version are to be indicated as follows:</p> <ul style="list-style-type: none"> – 2.2.2 means old versions before 2.3.0d – 2.0 means baseline 2 (i.e. 2.3.0d) – 3.0 means the future baseline 3 <p>For each of them the need to indicate not full compliance in brackets applies.</p>
4.13.1.3	ETCS on-board equipment for reception of infill-function information via loop or GSM-R	
4.13.1.4	ETCS national applications implemented (NID_XUSER of Packet 44)	
4.13.1.5	Class B or other train protection, control and warning systems installed (system and, if applicable, version)	"Class B" means systems according to the definition in the CCS TSI, including class B functionality provided via STM, either external or integrated with ERTMS/ETCS equipment. "Other" means legacy system that is neither ERTMS/ETCS nor Class B.
4.13.1.6	Special conditions implemented on-board to switch over between different train protection, control and warning systems.	<p>This parameter is for indicating if the on-board equipment allows the transition from one CCS system to another without bringing the train to a standstill.</p> <p>In the case of the transition from ETCS to Class B (including class B functionality provided via STM):</p> <ul style="list-style-type: none"> – CR CCS TSI (Dec 2006/679/EC), clause 4.2.2 and Index 8 of Annex A. <p>In the case of the transition between different Class B systems NNTR apply.</p>
4.13.2	Radio	
4.13.2.1	GSM-R equipment on board and its version (FRS and SRS)	Conformity with EIRENE specification (FRS/SRS) according to Appendix 1 of Annex A of CCS TSI.

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.13.2.2	Number of GSM-R mobile sets in driving cab for data transmission	
4.13.2.3	Class B or other radio systems installed (system and, if applicable, version)	Any legacy radio system.
4.13.2.4	Special conditions implemented on-board to switch over between different radio systems.	
4.14	Compatibility with train detection systems	
4.14.1	Type of train detection systems for which the vehicle has been designed and assessed	Conventional locomotives and passenger rolling stock: - 4.2.3.3 of Loc&Pas TSI 2011
4.14.2	Detailed vehicle characteristics related to compatibility with train detection systems	
4.14.2.1	Maximum distance between consecutive axles	Appendix 1 of Annex A of CCS TSI
4.14.2.2	Minimum distance between consecutive axles	Appendix 1 of Annex A of CCS TSI
4.14.2.3	Distance between the first and the last axle	Appendix 1 of Annex A of CCS TSI
4.14.2.4	Maximum length of the vehicle nose	Appendix 1 of Annex A of CCS TSI
4.14.2.5	Minimum wheel rim width	Appendix 1 of Annex A of CCS TSI and clause 4.2.3.5.2.2 of Loc&Pas TSI 2011
4.14.2.6	Minimum wheel diameter	The value for this parameter must be the same as the one for parameter 4.8.2. Appendix 1 of Annex A of CCS TSI High speed rolling stock: -4.2.10 (c) of HS RST TSI 2002 -Annex M of HS RST TSI 2008
4.14.2.7	Minimum flange thickness	Annex A of CCS TSI and clause 4.2.3.5.2.2 of Loc&Pas TSI 2011 High speed rolling stock: -Annex M of HS RST TSI 2008

Table 7: Detailed comments on the ERATV parameters

	Parameter	Comments and applicable TSI clauses
4.14.2.8	Minimum flange height	Appendix 1 of Annex A of CCS TSI and clause 4.2.3.5.2.2 of Loc&Pas TSI 2011 High speed rolling stock: -Annex M of HS RST TSI 2008
4.14.2.9	Maximum flange height	Appendix 1 of Annex A of CCS TSI and clause 4.2.3.5.2.2 of Loc&Pas TSI 2011 High speed rolling stock: -Annex M of HS RST TSI 2008
4.14.2.10	Minimum axle load	Appendix 1 of Annex A of CCS TSI
4.14.2.11	Metal and inductive components-free space between wheels	
4.14.2.12	Wheel material is ferromagnetic	Appendix 1 of Annex A of CCS TSI
4.14.2.13	Maximum sanding output	Appendix 1 of Annex A of CCS TSI
4.14.2.14	Possibility of preventing the use of sanding	Appendix 1 of Annex A of CCS TSI
4.14.2.15	Vehicle metal mass	
4.14.2.16	Maximum impedance between opposite wheels of a wheelset	Appendix 1 of Annex A of CCS TSI
4.14.2.17	Minimum vehicle impedance (between wheels and pantograph) (only for vehicles equipped for 1500V or 3000V DC)	Appendix 1 of Annex A of CCS TSI
4.14.2.18	Electromagnetic interferences caused by return current in the rails	
4.14.2.19	Electromagnetic emission of the train with respect to compatibility with train detection systems	

ANNEX 2 –CORRESPONDENCE BETWEEN ERATV AND RINF PARAMETERS

Table 8 : Corresponding parameters RINF-ERATV for the infrastructure subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
<p>RINF The result of the classification process set out in EN 15528:2008 (Annex A) and referred to in that standard as “Line Category”. It represents the ability of the infrastructure to withstand the vertical loads imposed by vehicles on the line or section of line for regular service as a combination of EN Category of Line with an associated speed according to Annex E or Annex C of the CR INF TSI.</p> <p>ERATV only for single vehicles or fixed formations for three load cases (working order, normal payload, exceptional payload)</p>	<p>1.1.1.1.2.3 Load capability</p>	<p>Line category-speed E5-100/D4xL-100/... [CharacterString]</p>	<p>4.6.3.1-4.6.3.3 static axle load</p>	[number] kg
			<p>4.6.1 Permissible payload for different Line Categories</p>	[number] t for Line Category 40 t for Line Category A/ 48 t for Line Category B1
<p>RINF Temperature range according EN 50125-1:1999, clause 4.3, for unrestricted access to the line.</p> <p>ERATV Three temperature zones + SC [EN 50125-1:1999, clause 4.3] to which a vehicle has been designed or WAG TSI (2006/861/EC) for wagons.</p>	<p>1.1.1.1.2.5 Temperature range</p>	<p>T1 (-25 to +40) T2 (-40 to +35) T3 (-25 to +45) Tx (-40 to +50)</p>	<p>4.3.1 Temperature range</p>	<p>T1 (-25 to +40) T2 (-40 to +35) T3 (-25 to +45) Tx (-40 to +50) additionally for wagons only T(n) (-40 to +35) T(s) (-25 to +45) T(RIV)</p>
<p>RINF Highest point of the section of line above sea level (NAP).</p> <p>ERATV Altitude range [EN 50125-1:1999, clause 4.2] to which a vehicle has been designed.</p>	<p>1.1.1.1.2.6 Maximum altitude</p>	[m]	<p>4.3.2 Altitude range</p>	<p>A1 (up to 1 400m) A2 (up to 1 000m) Ax (more than 1 400 to be indicated in m)</p>

Table 8 : Corresponding parameters RINF-ERATV for the infrastructure subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
<u>RINF</u> Climatic conditions on the line are severe or normal. <u>ERATV</u> Snow, ice and hail conditions [EN 50125-1:1999, clause 4.6] as defined in clause 4.2.6.1.5 of the CR LOC and PAS TSI to which the vehicle has been designed.	1.1.1.1.2.7 Existence of severe climatic conditions	nominal or severe	4.3.3 Snow, ice and hail condition	nominal or severe
<u>RINF</u> Gauges GA, GB or GC as defined in EN 15273-3:2009 Annex C/Multilateral gauge (Annex D sections D.1 to D.3 of EN 15273-3:2009) or international gauge (Annex C section C.2.1 of EN 15273-3:2009) other than GA, GB and GC using the kinematic method/domestic gauge as defined in EN 15273-3:2009 or other local gauge. <u>ERATV</u> Interoperabel gauges as defined in EN 15273-2:2009.	1.1.1.1.3.1 Interoperable gauge	GA/GB/GC + SC	4.2.1 vehicle kinematic gauge (interoperable gauge)	gauges assessed according to RST TSIs GA, GB, GC + SC
	1.1.1.1.3.2 Multinational gauges	GB1/GB2/...		
	1.1.1.1.3.3 National gauges	[CharacterString]	4.2.2 vehicle kinematic gauge (other gauges assessed using the kinematic method)	gauges not specified in the RST TSIs
<u>RINF</u> Gradients (expressed in millimeters per meter) and locations of changes in gradient. Km or mile related to line identification in normal running direction. Data is given as a chain of information: gradient-location-gradient-location-...-gradient. <u>ERATV</u> Brake performance on steep gradients related to thermal capacity of the	1.1.1.1.3.4 Gradient profile	[NN.N] [NNN.NN + CharacterString]	4.8.2.2 Brake performance on steep gradients with normal payload	indicate speed, gradient and distance or time [km/h, ‰ and km or min] [km/h, mm/m and km or min]

Table 8 : Corresponding parameters RINF-ERATV for the infrastructure subsystem

Interface	RINF		ERATV		
	Description	Parameter	Format	Parameter	Format
	brakes as defined in CR RST TSI clause 4.2.4.5.4.			4.8.3.3 Maximum gradient on which the unit is kept immobilised by the parking brake alone (if the vehicle is fitted with)	[‰] (mm/m)
	<u>RINF</u> Radius of the smallest horizontal curve of a section with regard to the local design speed of the curve. Radii profile instead? <u>ERATV</u> Minimum horizontal curve radius for which a vehicle has been assessed	1.1.1.1.3.5 Minimum radius of horizontal curve	[m]	4.9.4 Minimum horizontal curve radius capability	[m]
	<u>RINF</u> A single value that identifies the track gauge. In case of multi-rail track, a set of data is to be published separately to each pair of rails to be operated as separate track. <u>ERATV</u> More than one wheel set gauge possible indicating the type of change.	1.1.1.1.4.1 Nominal track gauge	1000 mm/1435 mm/1520 mm/1524 mm/1600 mm/1668 mm	4.1.3 Wheel set gauge	1000 mm/1435 mm/1520 mm/1524 mm/1600 mm/1668 mm or combination of them
	<u>RINF</u> Maximum cant deficiency defined as difference between the applied cant and a higher equilibrium cant the line has been designed for. The value is given in mm. <u>ERATV</u> Maximum uncompensated lateral acceleration (Cant deficiency) for which the vehicle has been assessed (EN 14363:2005)	1.1.1.1.4.2 Cant deficiency	[mm]	4.7.1 Cant deficiency (Maximum uncompensated lateral acceleration) for which the vehicle has been assessed	[mm]

Table 8 : Corresponding parameters RINF-ERATV for the infrastructure subsystem

Interface	RINF		ERATV		
	Description	Parameter	Format	Parameter	Format
	The tangent of the cone angle of a wheel-set with coned wheels whose lateral movement has the same kinematic wavelength as the given wheel-set on straight track and large-radius curves.	1.1.1.1.4.3 In service limits for Equivalent conicity	Open point, link to national rules if they exist. [CharacterString]	4.7.3 In service limits of equivalent conicity (or worn wheel profile) for which the vehicle has been tested	open point
	An aerodynamic phenomenon in which ballast is thrown up or projected related to HS TSI with more than 190 km/h.	1.1.1.1.4.5 Existance of ballast	Y/N Open point in HS INF TSI, link to national rules if they exist. [CharacterString]	4.3.4 Ballast pick up (for v≥190km/h vehicles only)	open point
	<u>RINF</u> Maximum unguided length of fixed obtuse crossings is based on a minimum wheel diameter in service. For non TSI compliant lines a value has to be specified.	1.1.1.1.5.2 Minimum wheel diameter for obtuse crossings	[mm]	4.9.2 Minimum in service wheel diameter	[mm]
	<u>RINF</u> Limit for longitudinal track resistance on existing lines not compliant to the TSI. <u>ERATV</u> Maximum train deceleration for emergency braking.	1.1.1.1.6.1 Maximum train deceleration	[m/s ²]	4.8.1 Maximum train deceleration	[m/s ²]
	<u>RINF</u> Indication of limitations on the use of eddy current brakes. If No the IM has to provide more details. <u>ERATV</u> Equipment of the vehicle with eddy current brake.	1.1.1.1.6.2 Use of eddy current brakes	allowed/allowed only for emergency brake/not allowed	4.8.4.1.1 Eddy current brake fitted	[Boolean] Y/N
				4.8.4.1.2 Possibility of preventing the use of the eddy current brake	[Boolean] Y/N
	<u>RINF</u> Indication of limitations on the use of magnetic brakes. If No the IM has	1.1.1.1.6.3 Use of magnetic brakes	allowed/allowed only for emergency brake/not	4.8.4.2.1 Magnetic brake fitted	[Boolean] Y/N

Table 8 : Corresponding parameters RINF-ERATV for the infrastructure subsystem

Interface	RINF		ERATV		
	Description	Parameter	Format	Parameter	Format
<p>to provide more details.</p> <p><u>ERATV</u> Equipment of the vehicle with magnetic brake.</p>			allowed/allowed for parking	4.8.4.2.2 Possibility of preventing the use of the magnetic brake	[Boolean] Y/N
<p><u>RINF</u> Defined probability that a passenger train with a fire on board will continue to operate for a defined time period. None for short tunnels less than 1 km.</p> <p><u>ERATV</u> Fire category the vehicle has been designed for according to SRT TSI.</p>	1.1.1.1.7.1 Fire category of rolling stock required	none/A/B	4.4.1 Fire safety category	none/A/B/SRT TSI Freight locomotive/OTM	
<p><u>RINF</u> Defined probability that a passenger train with a fire on board will continue to operate for a defined time period.</p>	1.1.1.1.7.2 National fire category of rolling stock required	[CharacterString]			
<p><u>RINF</u> Onboard device requested/allowed/forbidden</p> <p><u>ERATV</u> Equipment of the vehicle with lubrication device.</p>	1.1.1.1.7.3 Use of flange lubrication	requested, allowed, forbidden	4.10.3.1 Flange lubrication fitted	[Boolean] Y/N	
<p><u>ERATV</u> Possibility for the driver to switch the lubrication device off.</p>			4.10.3.2 Possibility of preventing the use of the lubrication device	[Boolean] Y/N	

Table 8 : Corresponding parameters RINF-ERATV for the infrastructure subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
<u>RINF</u> Total length of the siding/stabling track where trains can be parked safely <u>ERATV</u> For fixed formations only, otherwise depending on train formation. Length over buffers or length over couplings.	1.2.2.0.2.1 Usable length of siding	[m]	4.9.1 Vehicle length	[m]
<u>RINF</u> Value of the gradient exceeding the TSI limit of 2.5 mm/m. <u>ERATV</u> Maximum gradient for parking. Possible for train sets and self propelling vehicles, otherwise depending on train formation.	1.2.2.0.3.1 Maximum gradient for stabling tracks	[mm/m] (‰)	4.8.3.3 Maximum gradient on which the unit is kept immobilised by the parking brake alone (if the vehicle is fitted with)	[‰] (mm/m)
<u>RINF</u> Value of the radius if below the minimum limit given in CR INF TSI on non TSI compliant lines. <u>ERATV</u> Minimum horizontal curve radius for which a vehicle has been assessed	1.2.2.0.3.2 Minimum radius of horizontal curve	[m]	4.9.4 Minimum horizontal curve radius capability	[m]
<u>RINF</u> Usable length of the platform where trains can stop in normal operation. <u>ERATV</u> For fixed formations only, otherwise depending on train formation.	1.2.1.0.6.7 Usable length of platform	[m]	4.9.1 Vehicle length	[m]

Table 8 : Corresponding parameters RINF-ERATV for the infrastructure subsystem

Interface	RINF		ERATV	
	Parameter	Format	Parameter	Format
<u>RINF</u> Height of the platform where trains can stop in normal operation. <u>ERATV</u> Platform height for which the vehicle is designed.	1.2.1.0.6.8 Height of platform	[mm]	4.13.3.1 Platform height for which the vehicle is designed	[mm]

Table 9: Corresponding parameters RINF-ERATV for the energy subsystem

Interface	RINF		ERATV	
Description	Parameter	Format	Parameter	Format
<p><u>RINF</u> Nominal voltage and frequency if according to EN 50163:2004. If range of the EN is exceeded, maximum permanent voltage value to be published (maximum value given in brackets).</p> <p><u>ERATV</u> Nominal voltage and frequency and maximum voltage accepted (EN 50163:2004). Maximum voltage is only given when range of the standard is exceeded</p>	1.1.1.2.2.1 Energy supply system (voltage and frequency)	not electrified AC 25kV-50Hz AC 15kV-16.7Hz DC 3kV DC 1.5kV DC (Specific Case FR) DC 750V others (specify nominal voltage and frequency and ranges)	4.11.1 Energy supply system	autonomous AC 25kV-50Hz AC 15kV-16.7Hz DC 3kV DC 1.5kV DC 1.5kV (Specific Case FR) DC 750V third rail others (specify nominal voltage and frequency and ranges)
<p><u>RINF</u> The maximum allowable train current.</p> <p><u>ERATV</u> Maximum rated current from the catenary in relation to nominal voltage and power of the vehicle. Several values to be indicated for each energy supply system the vehicle is equipped for.</p>	1.1.1.2.2.2 Maximum train current	[A]	4.11.3 Maximum rated current from catenary	[A]
<p><u>RINF</u> The maximum allowable train current at standstill for DC systems.</p> <p><u>ERATV</u> Current taken by pantograph to supply auxiliary circuits for each DC system the vehicle is equipped for.</p>	1.1.1.2.2.3 Maximum current at standstill per pantograph	[A]	4.11.4 Maximum current at standstill per pantograph	[A]

Table 9: Corresponding parameters RINF-ERATV for the energy subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
<u>RINF</u> Nominal value of the contact wire height at a support in the normal conditions for TSI compliant lines. Maximum and minimum value of the contact wire height at a support in the normal conditions for existing lines. <u>ERATV</u> Working height range of the pantograph over top of rail.	1.1.1.2.2.5 Nominal contact wire height	[m] (with two decimals)	4.11.5 Height of interaction of pantograph with contact wires	from [m] to [m] (with two decimals)
	1.1.1.2.2.6 Maximum contact wire height	[m] (with two decimals)		
	1.1.1.2.2.7 Minimum contact wire height	[m] (with two decimals)		
<u>RINF</u> One or more pantograph heads according to RST TSI or EN 50367:2006. <u>ERATV</u> One or more profiles of pantograph the vehicle is equipped with.	1.1.1.2.3.1 Accepted pantograph heads	[CharacterString] multiple choice from the predefined list: 1950mm(Type1)/ 1950mm(Type2)/ 1950mm(PL)/ 1800mm(NO,SE)/ 1600mm(EP)/ 1600mm(GB,CTRL)/ 1600mm(GB)/ 1450/ others (specify)	4.11.6 Pantograph head	[CharacterString] multiple choice from the predefined list: 1950mm(Type1)/ 1950mm(Type2)/ 1950mm(PL)/ 1800mm(NO,SE)/ 1600mm(EP)/ 1600mm(GB,CTRL)/ 1600mm(GB)/ 1450/ others (specify)
<u>RINF</u> Maximum number of raised pantographs allowed on the line. Minimum spacing centre line to centre line of the pantograph head in case of two or more pantographs given for maximum speed. <u>ERATV</u>	1.1.1.2.3.2 Requirements for number of raised pantographs and spacing between them (if the OCL has been	[CharacterString]	4.11.7 Number of pantographs in contact with OCL	number
			4.11.8 Shortest distance between	[m]

Table 9: Corresponding parameters RINF-ERATV for the energy subsystem

Interface	RINF		ERATV		
	Description	Parameter	Format	Parameter	Format
	For single units or fixed formations (otherwise depending on train composition). Given as number of pantographs raised and as shortest distance between two pantographs.	assessed according ENE TSI, A, B or C category according clause 4.2.17 has to be indicated)		two pantographs in contact with the OCL	
<u>RINF</u> One or more types of contact strip material allowed to be used on the line. <u>ERATV</u> Contact strip material the vehicle may be equipped with.	1.1.1.2.3.3 Permitted contact strip material	Copper/plain carbon/carbon with additive material/carbon with cladded copper/others	4.11.9 Material of pantograph contact strip the vehicle may be equipped with	Copper/plain carbon/carbon with additive material/carbon with cladded copper/others	
<u>RINF</u> Mean contact force curve allowed on the line. <u>ERATV</u> Covered by indication of conformity with the TSIs.	1.1.1.2.5.2 Mean contact force curve permitted	AC C/C1/C2 DC1,5 kV/DC 3,0kV or [N]			
<u>RINF</u> Automatic dropping device (ADD) according to EN 50206-1 required on the vehicle. <u>ERATV</u> Vehicle equipped with automatic dropping device (ADD) or not.	1.1.1.2.5.3 Automatic dropping device (ADD) required	[Y/N]	4.11.10 Automatic dropping device (ADD) fitted	[Y/N]	

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
Description	Parameter	Format	Parameter	Format
<u>RINF</u> The different ERTMS / ETCS application levels are a way to express the possible operating relationships between track and train. Level definitions are principally related to the track side equipment used, to the way the track side information reaches the on board units and to which functions are processed in the track side and in the on board equipment respectively. <u>ERATV</u> ETCS level installed onboard.	1.1.1.3.2.1 ETCS level	no/1/2/3	4.14.1.1 ETCS equipment on-board and its level	no/1/2/3
<u>RINF</u> ETCS baseline installed lineside. (version in brackets not fully compatible)	1.1.1.3.2.2 ETCS baseline.version (x.y)	(2.2.2)/2.0/3.0	4.14.1.2 ETCS baseline.version (x.y)	(2.2.2)/2.0/3.0
<u>ERATV</u> ETCS baseline installed onboard.(version in brackets not fully compatible)				
<u>RINF</u> Infill is network access criteria.	1.1.1.3.2.3 ETCS infill necessary for line access	[Y/N]	4.14.1.3 ETCS onboard equipment for reception of infill	Loop/GSM-R/Loop & GSM-R

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
<p><u>RINF</u> Information about installed trackside equipment capable to transmit infill information by loop or GSM-R for level 1 installations.</p> <p><u>ERATV</u> Capability of the onboard equipment to receive infill information by loop or GSM-R for ETCS level 1. Infill via balises is possible for any ETCS train.</p>	1.1.1.3.2.4 ETCS infill installed line side	None/Loop/GSM-R/ Loop & GSM-R	function information via loop or GSM/R	
<p>Packet 44 is the means to transmit data for national applications between train and track and vice versa, using the data transmission facilities included within the ETCS. NID_XUSER values managed by ERA in a document about ETCS variables.</p> <p><u>RINF</u> National application installed lineside.</p> <p><u>ERATV</u> Capability of receiving data related to national applications by means of ETCS equipment.</p>	1.1.1.3.2.5 ETCS national application implemented (NID_XUSER of packet 44)	number from a predefined list	4.14.1.5 ETCS national applications implemented (NID_XUSER of packet 44)	number from a predefined list
Restrictions or conditions due to partial compliance with the CCS TSI.	1.1.1.3.2.6 Existence of operating restrictions or conditions	[Y/N] yes - link to more details	3.1.2.3/3.1.2.4 Restrictions indicated in authorisation	[CharacterString]

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
Class B (Annex B of CCS TSI) and/or other train protection, control and warning systems in normal operation. <u>RINF</u> System installed lineside. <u>ERATV</u> Systems installed onboard	1.1.1.3.5.1 Class B and/or other train protection, control and warning systems installed (system and if applicable version)	[CharacterString]	4.14.1.5 Class B and/or other train protection, control and warning systems installed (system and if applicable version)	[CharacterString]
<u>RINF</u> More than one class B (Annex B of CCS TSI) and/or other train protection, control and warning system required onboard and active simultaneously.	1.1.1.3.5.2 Need for more than one class B (Annex B of CCS TSI) and/or other train protection, control and warning system required onboard	[CharacterString]		
Switch over between ETCS/Class B and Class B/Class B systems whilst running. <u>RINF</u> Installation depends on local conditions. <u>ERATV</u>	1.1.1.3.7.1 Existence of switch over between different protection, control and warning systems	[Y/N] yes - link to more detailed switch over specification	4.14.1.6 Special conditions implemented onboard to switch over between different train protection, control and warning systems	[CharacterString], e.g. (System XX/system YY) more than one combination possible
GSM-R FRS and SRS version number. <u>RINF</u> GSM-R installed lineside. <u>ERATV</u> GSM-R installed onboard.	1.1.1.3.3.1 GSM-R version	[CharacterString] (FRS/SRS text string from a predefined list) e.g. none, 6/14, 7/15	4.14.2.1 GSM-R equipment on board and its version (FRS and SRS)	[CharacterString] (FRS/SRS text string from a predefined list) e.g. none, 6/14, 7/15

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
<p><u>RINF</u> Number of mobiles for data transmission required for ETCS supervision on the line.</p> <p><u>ERATV</u> Number of mobiles active for data transmission in parallel to increase availability.</p>	1.1.1.3.3.2 Minimum number of active GSM-R mobiles onboard for data transmission	0/1/2/3	4.14.2.2 Number of GSM-R mobile sets in driving cab for data transmission	0/1/2/3
<p>Class B (Annex B of CCS TSI) or other radio systems in normal operation.</p> <p><u>RINF</u> System installed lineside.</p> <p><u>ERATV</u> Systems installed onboard</p>	1.1.1.3.6.1 Class B or other radio systems installed (system and if applicable version)	[CharacterString] UIC Radio Chapter 1-4/BR 1845/VR Train Radio	4.14.2.3 Class B or other radio systems installed (system and if applicable version)	[CharacterString] UIC Radio Chapter 1-4/BR 1845/VR Train Radio
<p>Switch over between GSM-R/Class B, Class B/Class B radio systems and no communication system whilst running.</p> <p><u>RINF</u> Installation depends on local conditions.</p> <p><u>ERATV</u> manual procedure by driver??</p>	1.1.1.3.7.2 Existence of switch over between different radio systems	[Y/N] yes - link to more detailed switch over specification	4.14.2.4 Special conditions implemented onboard to switch over between different radio systems	[CharacterString], e.g. (System XX/system YY) more than one combination possible
<p><u>RINF</u> Types of train detection system installed.</p> <p><u>ERATV</u> Covered by compliance to the RST TSI.</p>	1.1.1.3.8.1 Types of train detection system	[CharacterString] track circuit/wheel detector/loop	4.15.1 Type of train detection systems for the vehicle has been designed and assessed	[CharacterString] track circuit/wheel detector/loop

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
	Parameter	Format	Parameter	Format
Related to the minimum length of train detection section.	1.1.1.3.8.2 Maximum permitted distance between two consecutive axles	[mm]	4.15.2.1 Maximum distance between two consecutive axles	[mm]
Related to axle counter or wheel sensor or specific case.	1.1.1.3.8.3 Minimum permitted distance between two consecutive axles	[mm]	4.15.2.2 Minimum distance between two consecutive axles	[mm]
Related to track circuits or respective specific cases. <u>ERATV</u> Related to a single vehicle.	1.1.1.3.8.4 Minimum permitted distance between first and last axle	[mm]	4.15.2.3 Distance between first and last axle	[mm]
Related to track circuits and axle counters. <u>ERATV</u> Maximum distance from the first axle to the end of the buffer or vehicle body.	1.1.1.3.8.5 Maximum permitted length of the vehicle nose	[mm]	4.15.2.4 Maximum length of the vehicle nose	[mm]
Related to axle counter, pedals and treadles.	1.1.1.3.8.6 Minimum permitted width of the rim	[mm]	4.15.2.5 Minimum wheel rim width	[mm]
Compatibility to axle counters. <u>RINF</u> Value taking into account Maximum permitted speed.	1.1.1.3.8.7 Minimum permitted wheel diameter	[mm]	4.15.2.6 Minimum wheel diameter	[mm]
Compatibility with axle counter, pedals and treadles.	1.1.1.3.8.8 Minimum permitted thickness of the flange	[mm]	4.15.2.7 Minimum flange thickness	[mm]

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
Compatibility with axle counter, pedals and treadles.	1.1.1.3.8.9 Minimum permitted height of the flange	[mm]	4.15.2.8 Minimum flange height	[mm]
Compatibility with axle counter, pedals and treadles.	1.1.1.3.8.10 Maximum permitted height of the flange	[mm]	4.15.2.9 Maximum flange height	[mm]
Compatibility with track circuits.	1.1.1.3.8.11 Minimum permitted axle load	[t]	4.15.2.10 Minimum axle load	[t]
Compatibility with wheel sensors for axle counters.	1.1.1.3.8.12 Existence of rules for metal-free or inductive components-free space around wheels	open point, link to national rules if they exist	4.15.2.11 Metal and inductive components-free space between wheels	open point
Compatibility with induction loops.	1.1.1.3.8.13 Existence of rules for metal-mass of vehicle	open point, link to national rules if they exist	4.15.2.15 Vehicle metal-mass	open point
Compatibility with wheel sensors for axle counters. Requirement in CCS TSI is not precise.	1.1.1.3.8.14 Ferromagnetic characteristics of wheel material required	[Y/N]	4.15.2.12 Wheel material is ferromagnetic	[Y/N]
	1.1.1.3.8.15 Maximum permitted impedance between opposite wheels of a wheel set	[Ω]	4.15.2.16 Maximum impedance between opposite wheels of a wheel set	[Ω]

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
	Description	Parameter	Format	Parameter
Compatibility with track circuits. ERATV Only relevant for DC 1500 kV.	1.1.1.3.8.16 Minimum permitted impedance between pantograph and wheels	[Ω for Hz]	4.15.2.17 Minimum vehicle impedance (between pantograph and wheels)	[Ω for Hz]
Maximum sanding output.	1.1.1.3.8.17 Maximum sanding output	link to national rules if they exist	4.15.2.13 Maximum sanding output	[g] per [s]
	1.1.1.3.8.18 Sanding override by driver required	[Y/N]	4.15.2.14 Possibility of preventing the use of sanding	[Y/N]
Compatibility with track circuits.	1.1.1.3.9.1 Existence of rules for return current in the rails	open point, link to national rules if they exist	4.15.2.18 Electromagnetic interferences caused by return current in the rails	open point
Compatibility with wheel detectors.	1.1.1.3.9.2 Existence of rules for electric, magnetic, electromagnetic fields	open point, link to national rules if they exist	4.15.2.19 Electromagnetic emission of the train with respect to compatibility with train detection systems	open point
system for degraded situation	1.1.1.3.10.1 ETCS level for degraded situation	[CharacterString]	4.14.1.1 ETCS level	no/1/2/3
system for degraded situation	1.1.1.3.10.2	[CharacterString]	4.14.1.5	[CharacterString]

Table 10: Corresponding parameters RINF-ERATV for the control-, command and signalling subsystem

Interface	RINF		ERATV	
Description	Parameter	Format	Parameter	Format
	Class B train protection, control and warning systems for degraded situation		Class B and/or other train protection, control and warning systems installed (system and if applicable version)	