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ANNEX

ANNEX

to the

Commission Implementing Regulation

amending Implementing Regulation (EU) 2019/773 on the technical specification for interoperability relating to the operation and traffic management subsystem of the rail system within the European Union

ANNEX

The Annex to Regulation (EU) 2019/773 is amended as follows:

(1) point 1.3 is replaced by the following:

‘

1.3. Content

In accordance with Article 4(3) of Directive (EU) 2016/797, this TSI lays down the essential requirements for the ‘operation and traffic management’ subsystem and establishes the fundamental operating principles and common operating rules to the Union railway system. Furthermore, it establishes the interface requirements between infrastructure managers and railway undertakings.’;

(2) chapter 2 is replaced by the following:

‘2. DESCRIPTION OF SCOPE

This TSI applies to the Union rail system, which includes TSI conform and non-TSI conform vehicles and fixed installations.

This TSI relates to processes and procedures, as well as to physical elements of vehicles and fixed installations that are important for their operational function in the context of this TSI and requirements applicable to staff executing safety-critical tasks.

The railway undertaking and the infrastructure manager shall ensure that all requirements of this TSI become a relevant part of railway undertaking’s and infrastructure manager’s safety management system (‘SMS’) as required by Directive (EU) 2016/798.’;

(3) Point 3.2 is modified as follows:

(a) the first and the second paragraphs are deleted;

(b) Table’s line 4.2.1.2 is replaced by: ‘

4.2.1.2	Documentation for staff executing safety-critical tasks						X						x					X	X	X	

’;

(c) Table’s line 4.2.1.2.1 is replaced by: ‘

4.2.1.2.1	Rule book						X						X					X		X	

’;

(d) Table’s lines 4.2.1.2.2.1, 4.2.1.2.2.2 and 4.2.1.2.2.3 are deleted;

(e) Table’s line 4.2.1.2.3 is replaced by: ‘

4.2.1.2.3	Train running information for drivers																	X	X	X	

’;

(f) table's line 4.2.1.2.4 is replaced by: ‘

4.2.1.2.4	Informing the driver in real time during train operation																X	X	X	

’;

(g) Table's lines 4.2.1.3 and 4.2.1.4 are deleted;

(h) Table's line 4.2.3.1 is replaced by: ‘

4.2.3.1	Train planning and timetable		X															X	X	

’;

(i) Table's lines 4.2.3.5.1 and 4.2.3.5.2 are replaced by: ‘

4.2.3.5.1	Recording of monitoring data outside the train						X											X		
4.2.3.5.2	Recording of monitoring data on-board the train						X											X		

(4) ’;point 4.1 is replaced by the following:

‘

4.1. Introduction

In accordance with Directive 2012/34/EU of the European Parliament and of the Council*, it is the overall responsibility of the infrastructure manager to provide all the appropriate parameters and characteristics of the infrastructure which shall be used by the railway undertaking to check the compatibility of its trains to run on its network, taking into account the geographic particularities of individual lines and the functional or technical specifications set out in this section.

The fundamental operational principles and common operational rules applicable to the Union rail network are defined in Appendix B.

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* Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (OJ L 343, 14.12.2012, p. 32).’;

(5) point 4.2 is replaced by the following:

‘

*4.2. **Functional and technical specifications of the subsystem***

The functional and technical specifications of the ‘operation and traffic management’ subsystem define the specifications to ensure safe operation, system reliability and availability and operating efficiency of the Union rail system, with focus in particular on specifications relating to:

– staff executing safety-critical tasks,

– trains,

– train operations,

– ERTMS based harmonised operation.';

(6) point 4.2.1.1 is replaced by the following:

'

4.2.1.1. **General requirements**

In its Safety Management Systems (SMS) established in accordance with Annexes I and II to Commission Delegated Regulation (EU) 2018/762*, each RU and IM shall identify its safety-critical tasks and safety-related functions, and the staff responsible for executing them. RUs and IMs shall define and describe in their SMS procedures and requirements to train, assess and monitor the competence of their staff executing safety-critical tasks, except the requirements laid down in the following provisions:

(i) training, fitness and certification requirements for train drivers (addressed by Directive 2007/59/EC of the European Parliament and of the Council**);

(ii) elements relevant to professional qualification applicable to staff 'accompanying trains' other than the train driver, to which Appendix F of this Annex shall apply;

(iii) elements relevant to professional qualification applicable to staff 'preparing trains' other than the train driver, to which Appendix G of this Annex shall apply.

Any qualification acquired based on the procedures and rules defined in the SMS of the RU or IM shall be recorded in the concerned SMS.

The documents providing evidence of training, experience and professional competences shall be delivered to the concerned staff executing safety-critical tasks, upon request.

Such a qualification shall allow the member of staff executing safety-critical tasks to undertake similar tasks for another RU or IM, subject to the identification of additional training needs on geographical and technical specifications and the SMS of the RU or IM in accordance with point 4.6.3.2, and to the satisfactory completion of that training.

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* Commission Delegated Regulation (EU) 2018/762 of 8 March 2018 establishing common safety methods on safety management system requirements pursuant to Directive (EU) 2016/798 of the European Parliament and of the Council and repealing Commission Regulations (EU) No 1158/2010 and (EU) No 1169/2010 (OJ L 129, 25.5.2018, p. 26).

** Directive 2007/59/EC of the European Parliament and of the Council of 23 October 2007 on the certification of train drivers operating locomotives and trains on the railway system in the Community (OJ L 315, 3.12.2007, p. 51).';

(7) point 4.2.1.2 is replaced by the following:

'4.2.1.2. **Information exchange between IMs and RUs, including information for staff executing safety-critical tasks**

IMs and RUs shall plan, prepare and operate trains and instruct staff in accordance with the information contained in Rule Book and Route Book.

Their staff executing safety-critical tasks shall be trained, and train drivers certified, based on the information provided in the Rule Book and the Route book in accordance with their SMS.

IMs and RUs shall cooperate to exchange information and follow a process for establishing and regularly updating the Rule Book and Route Book as appropriate. Such information shall be applicable for normal, degraded and emergency operations.

The IM, in consultation with the RUs operating on its network, shall define the appropriate procedures for communication in real time and emergency situations in order to ensure that information relevant for operation is provided to the RU and/or the driver as soon as such information is available.

IMs and RUs shall ensure that all infrastructure information and rules relevant for planning, preparing and operating of trains are shared and communicated to staff executing safety-critical tasks in accordance with each staff member's tasks in all the IMs and RUs respective operating language(s).

IM and RUs may group the Rule Book and Route Book information into support for individual staff and/or individual operations.

IMs and RUs shall supply to each member of their respective staff executing safety-critical tasks, including train drivers, with versions of the Rule Book and the Route Book tailored to the information necessary for their operations. This shall include the interface information where staff executes safety-critical tasks with a direct interface between IM and RU, in particular to ensure safety-related communication between staff authorising the movement of trains and staff onboard trains.

Future developments

1. 12 months after the Agency has delivered the updates to the RINF Application in accordance with Article 6 (1) of [PO please enter Commission regulation amending Commission Implementing Regulation (EU) 2019/777] and the IMs have made the data available through RINF, RUs shall base their Route Books on the information contained in RINF.
2. 12 months after point 1, IMs and RUs shall digitalise the Rule Book and the Route Book .
3. At the latest by 15 December 2025, the Agency shall deliver a Recommendation on how to harmonize the digitalisation of real time information exchange, based on Appendix C, between members of IMs' and RUs' staff.';

(8) point 4.2.1.2.1 is replaced by the following:

'

4.2.1.2.1. ***Rule Book***

The RU and the IM shall be responsible for the compilation of their respective Rule Book as integral part of their SMS to instruct staff executing safety-critical tasks, on operational rules applicable to their role.

The Rule Book is a description of the operational rules and procedures for a network or a part thereof and vehicles operated on that network or its part(s) in normal, degraded operation and emergency situations. It shall be consistent across all the

lines over which the RU operates and it shall be consistent across all the lines managed by the IM.

The Rule Book shall cover:

(a) for the RU:

(i) the common EU safety and operating rules and procedures in accordance with Appendices A, B, C and D,

(ii) complemented by the national rules covering areas defined by Appendix I, including the IM's instructions to the RUs on the operations of its infrastructure and the rules for managing interfaces between the IM and the RUs, all of which need to be communicated to the RUs in accordance with the IM's SMS interface procedures,

(iii) RU instructions to the staff executing safety-critical tasks including train driver laid down in its SMS, and

(iv) information relevant to the vehicles and trains operated by the RU.

(v) all the lines over which the RU operates.

(b) For the IM:

(i) the common EU safety and operating rules and procedures in accordance with Appendices A, B, C and D,

(ii) complemented by the national rules covering areas defined by Appendix I, including the rules for managing interfaces between the IM and the RUs,

(iii) IM instructions to the staff executing safety-critical tasks laid down in its SMS.

(iv) information relevant to the vehicles operated by the IM when applicable and when the IM is not acting as an RU.

(v) all the lines managed by the IM.

It shall include procedures covering, as a minimum, the following aspects:

– staff safety and security,

– signalling and control command (class A and class B systems),

– train operation, including degraded mode and related to line characteristics and vehicle characteristics,

– incidents and accidents, including the reporting scheme, incident or accident management plan and the detailed actions to be taken in the event of an accident or an incident;

– degraded and emergency situations

– for the RUs, traction and rolling stock, including all information relevant to the operation of the rolling stock during normal and degraded mode (such as trains requiring assistance); such documentation shall also focus on the specific interface with the infrastructure manager's staff in these cases.

It shall have two appendices:

– Appendix 1: Manual of communication procedures in accordance with Appendix C1;

– Appendix 2: Book of European and national instructions in accordance with Appendix C2.

Predefined messages and forms shall at least exist in the ‘operating’ language(s) of infrastructure manager(s).

If the language chosen by the railway undertaking for the Rule Book is not the language in which the appropriate information was originally supplied, it is the responsibility of the railway undertaking to arrange for any necessary translation and/or provide explanatory notes in another language.’;

(9) point 4.2.1.2.2 is replaced by the following:

‘

4.2.1.2.2. *Route Book*

The IM shall establish the infrastructure information covering its network for its own use and for the use of the RUs operating on this network. The IM shall provide each RU with the information for the RUs’ Route Book as defined in Appendix D2, including permanent or temporary restrictions and modifications.

The infrastructure manager shall ensure that the infrastructure information is complete and accurate; the information shall be managed in accordance with Annex II, point 4.4.3 of Delegated Regulation (EU) 2018/762.

The railway undertaking is responsible for the complete and correct compilation of the Route book, using the information supplied by the infrastructure manager(s), in accordance with Annex I, point 4.4.3 of Delegated Regulation (EU) 2018/762. The railway undertaking shall ensure the route book duly describes operational conditions related to line characteristics and vehicle characteristics.

The infrastructure manager shall inform the railway undertaking of any changes to the infrastructure information, whenever such information becomes available and affects train operations, including permanent or temporary restrictions and modifications.

The IM, in consultation with the RUs operating on its network, shall define the appropriate procedures when modification of the Route Book is not transmitted from the IM to RU in the appropriate agreed timing, as defined in the SMS of the IM and reflected in the SMS of the RU; in that case, the IM shall also direclty inform the driver.

RU Route book

Using the information received, the railway undertaking is responsible for the complete and correct compilation of the Route Book, covering the infrastructure on which it operates trains.

The railway undertaking shall ensure that the route information compiled in the Route Book consists in a description of the lines and the associated lineside equipment for the lines over which the driver will operate and relevant to the driving task.

The format of the Route Book shall be prepared in the same manner for all the infrastructures operated on by the trains of an individual railway undertaking.

Based on the modified information, the railway undertaking shall update the route book and communicate the modification in accordance with the procedures defined in their SMS, including instructing their drivers impacted by the change.

IM Route Book

The IM shall compile in an IM Route Book the infrastructure information to be shared with their staff executing safety-critical tasks and compile it in accordance with its SMS.

The infrastructure manager shall update the IM Route Book, whenever such information becomes available and affects the tasks of its staff executing safety critical tasks, including permanent or temporary restrictions and modifications.';

(10) points 4.2.1.2.2.1, 4.2.1.2.2.2 and 4.2.1.2.2.3 are deleted;

(11) point 4.2.1.2.3 is replaced by the following:

'

4.2.1.2.3. ***Train running information for drivers***

When the railway undertaking provides the drivers with their working plan, they shall provide information necessary for the normal running of the train and as a minimum include:

– the train identification;

– the train running days (if necessary);

– the stopping points and the activities associated with them;

– other timing points;

– the arrival/departure/passing times at each of those points.

Such train running information must be updated whenever appriopriate prior to departure and shall be based on and supplment the Rule Book and Route Book information. The information shall be provided digitally to the train drivers by 15 December 2026.';

(12) point 4.2.1.2.4 is replaced by the following

'4.2.1.2.4 Informing the driver in real time during train operation

The infrastructure manager shall inform and instruct drivers in real time about last minute changes to operations regarding the line or relevant lineside equipment, in accordance with the communication methodology established between IM and RU in line with Appendix C.

Real time information shall be limited to situation and changes that have not been managed under 4.2.1.2.2 and 4.2.1.2.4 in accordance with IMs and RUs SMS procedures and are directly affecting the driver's route.

For emergency situations, appropriate alternative means of communication shall be established between the IM and RU in order to ensure that relevant information is made available.

Infrastructure managers and railway undertakings must have a process in place to be able to confirm the suitability of the vehicles and the drivers in respect of route knowledge for real time route deviation.';

(13) point 4.2.1.3 and 4.2.1.4 are replaced by "Not used";

(14) in point 4.2.2.1.2, the fifth paragraph is replaced by the following:

'In order to access lines identified in RINF where permissive driving is used, by the dates mentioned below for the harmonisation of the rear-end signal as per Section 4.2.2.1.3.2, the luminous intensity of vehicle headlamps shall be in accordance with the level defined for the full-beam headlamps in point (5) of Section 4.2.7.1.1 of the Annex to Commission Regulation (EU) 1302/2014* (Loc&Pas TSI).

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* Commission Regulation (EU) No 1302/2014 of 18 November 2014 concerning a technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem of the rail system in the European Union (OJ L 356, 12.12.2014, p. 228).';

(15) in point 4.2.2.1.3.2, the following text is deleted:

'Reports:

At the latest by 30 September 2020, the concerned Member States shall deliver to the Commission reports on their use of reflective plates, identifying any serious obstacles to the planned elimination of national rules.

The infrastructure manager shall ensure that the information provided to the railway undertaking (s) is complete and accurate.';

(16) point 4.2.2.5.1 is amended as follows:

(a) point B is replaced by the following:

'(B) The infrastructure manager shall provide the information for route compatibility as defined in Appendix D1 through RINF.

Appendix D1 sets out all the parameters that shall be used in the process of the railway undertaking before the first use of a vehicle or train configuration in order to ensure all vehicles composing a train are compatible with the route(s) the train is planned to operate on including, where appropriate, deviation routes and routes to workshops. Modifications of the route and changes of infrastructure characteristics have to be taken into account. When a parameter of Appendix D1 is harmonised at network(s) level of an area of use, conformity with that parameter may be presumed for any vehicle authorised for that area of use. National rules or additional national requirements for network access in respect of route compatibility are in principle considered incompatible with Appendix D1. The infrastructure manager shall not require additional technical checks for the purpose of route compatibility beyond the list laid down in Appendix D1.

At the latest by 15 December 2026, until RINF allows for hosting the following new parameters:

a) Specific check for Combined Transport

(i) 1.1.1.1.3.4 Standard combined transport profile number for swap bodies

(ii) 1.1.1.1.3.9 Standard combined transport profile number for roller units

(iii) 1.1.1.1.3.8 Standard combined transport profile number for container

(iv) 1.1.1.1.3.5 Standard combined transport profile number for semi-trailers

(v) (CT Line code)

b) New - Train detection systems : influencing unit

(i) 1.1.1.3.4 Train detection systems defined based on frequency bands

(ii) 1.1.1.3.4.2 Frequency bands for detection

(iii) 1.1.1.3.4.2.1 Maximum interference current

(iv) 1.1.1.3.4.2.2 Minimum Input impedance

(v) 1.1.1.3.4.2.3 Maximum magnetic field

c) 1.1.1.3.2.11 Safe consist length information from on-board necessary for access to the line and SIL

the infrastructure manager shall provide these information through other means free of charge as soon as possible and in electronic format to railway undertakings, authorized applicants for path requests and, where applicable, for the applicant referred to in Article 2(22) of Directive (EU) 2016/797.

The infrastructure manager shall inform the railway undertaking of the changes on characteristics of the route through RINF whenever such information becomes available and affects trains operation.

(b) the following point (D) is added:

‘(D) Specific elements for route compatibility of Combined Transport trains:

– a Combined Transport train not exceeding the loading gauge of all tracks of the line, and for which the CT code does not exceed the codification of all tracks of the line, shall be considered as a normal transport;

– a Combined Transport train exceeding the loading gauge, and for which the CT code does not exceed the codification of the line, shall be considered as a transport with specific requirements as referred to in Appendix I. Such requirements shall be universally applicable to all trains in this category and compliance with them shall not need to involve any further authorisation process between the RU and the IM;

– if the CT code exceeds the codification of the line, or if the line is not codified, a specific authorisation (exceptional transport), based on an evaluation of the operational and technical feasibility, shall be issued by the IM.

Operational procedures applicable to combined transport shall comply with the specifications set out in point 3 of the ERA Technical Document on codification of combined transport (ERA/TD/2023-01/CCT v1.0 06/03/2023[1]).’;

[1] ERA/TD/CT publicly available on ERA website

(17) point 4.2.2.5.2 is amended as follows:

(a) point (d) is deleted;

(b) the following second paragraph is inserted:

'The railway undertaking is responsible for ensuring that all vehicles composing the train including their load are technically fit for the journey to be undertaken and remain so throughout the journey.';

(18) point 4.2.2.6 is replaced by the following:

'

4.2.2.6. Train braking

The railway undertaking shall set up and implement braking requirements in accordance with points 4.2.2.6.1 and 4.2.2.6.2 and shall manage them within its safety management system.';

(19) point 4.2.2.6.2 is amended as follows:

(a) point (1) is replaced by the following:

'(1) The infrastructure manager shall provide the railway undertaking with all relevant line characteristics for each route through RINF:

(i) signalling distances (warning, stopping) containing their inherent safety margins, that are provided via the respective locations of "Stopping signal" and "Warning signal", requested in Appendix D2 via the parameter 1.1.1.3.14.3

(ii) gradients,

(iii) maximum permitted speeds;

(iv) conditions of use of braking systems possibly affecting the infrastructure such as magnetic, regenerative and eddy-current brake.

The infrastructure manager shall ensure that the information provided to the railway undertaking(s) is complete and accurate, and shall inform the railway undertaking of the changes on the line characteristics through RINF whenever such information becomes available and affects trains operation.';

(b) point (3) is replaced by the following:

'(3) The railway undertaking shall, in the planning stage, determine the braking regime, the braking capability and corresponding maximum speed of the train taking into account:

(i) the relevant line characteristics as expressed in point (1) and, if available, the information provided by the infrastructure manager in accordance to point (2); and

(ii) the rolling stock-related margins derived from reliability and availability of the braking system.

Furthermore, the railway undertaking shall ensure that during operation each train achieves at least the necessary braking performance. In particular the railway undertaking has to set up rules to be used if a train does not reach the necessary braking performance during operation. In this case, the railway undertaking shall immediately inform the infrastructure manager. The infrastructure manager may take appropriate measures to reduce the impact on the overall traffic on its network.';

(20) point 4.2.2.8 is modified as follows:

‘4.2.2.8. Requirements for signal and lineside marker sighting

Without prejudice of ERTMS operations defined in Appendix A, the driver shall be able to observe signals and lineside markers. Signals and lineside markers as well as all other types of lineside signs that are safety related shall be observable by the driver whenever applicable.

Therefore, signals, lineside markers, signs and information boards shall be designed and positioned in such a consistent way to facilitate this. Issues that shall be taken into account include (see point 4.3.2 of this regulation for reference to CCS TSI):

(i) that they are suitably sited so that train head lights allow the driver to read the information,

(ii) suitability and intensity of lighting, where required to illuminate the information,

(iii) where retro-reflectivity is employed, the reflective properties of the material used are in compliance with appropriate specifications and the signs are fabricated so that train head lights easily allow the driver to read the information.

Driving cabs shall be designed in such a consistent way that the driver is able to easily see the information displayed to him (see point 4.3.3.1 of this Regulation for reference to Loc&Pas TSI).’;

(21) point 4.2.2.9 is replaced by the following:

‘4.2.2.9. Driver Vigilance

The driver’s activity on board shall be monitored to automatically stop the train when a lack of driver's activity is detected. The requirements related to the means to monitor the driver’s on-board activity are specified in the clause set out in point 4.2.9.3.1 of LOC&PAS TSI.’;

(22) point 4.2.3 is replaced by the following:

‘

4.2.3. ***Specifications relating to train operations, including ERTMS based operation***

Fundamental operational principles and common operational rules set out in Appendix B shall apply in addition to this chapter for train operation in the Union rail system.

The ERTMS operational principles and rules specified in Appendix A of this TSI shall apply where ERTMS is deployed.’;

(23) point 4.2.3.1 is replaced by the following:

‘

4.2.3.1. Train planning and timetable

In accordance with Directive 2012/34/EU, the infrastructure manager shall advise what data is required when a train path is requested.

Every train has to follow a timetable, agreed between IM and RU under path allocation process; the IM shall ensure the punctual running of trains and assists in service performance when scheduling the timetable.';

(24) point 4.2.3.3.1 is replaced by the following:

'

4.2.3.3.1. ***Checks and tests before departure***

The railway undertaking shall determine the checks and tests to ensure that any departure of train is undertaken safely.';

(25) the word "supervision" in the title of points 4.2.3.5.1 and 4.2.3.5.2 is replaced by 'monitoring';

(26) in point 4.2.3.4.3, the second indent is replaced by the following:

'- information to the driver of the presence and position of dangerous goods on the train';

(27) in point 4.3.1, the table's line "Modifications to information contained within the route book – Degraded Operation" is replaced by the following: '

Route book	4.2.1.2.2	Operating rules	4.4
Degraded operation	4.2.3.6		

';

(28) in point 4.3.2, the table is amended as follows:

(i) the line "Driver's Rule book Operating rules" is replaced by the following:

'

Rule book	4.2.1.2.1	Operating rules (normal and degraded conditions) List of harmonised text indications and messages displayed on the ETCS Driver Machine Interface	4.4 Appendix E
Operating rules	4.4		
ERTMS trackside engineering information relevant to operation	Appendix D3		

';

(ii) the line "Requirements for lineside signal and marker sighting" is replaced by the following: '

Requirements for lineside signal and marker sighting	4.2.2.8	track-side control-command and signalling objects	4.2.15 4.2.18

';

(iii) the line “Driver’s Rule book” is replaced by the following: ‘

Rule Book	4.2.1.2.1	Use of sanding equipment On-board flange lubrication Use of composite brake blocks	4.2.10

’;

(29) in point 4.3.3.1:

(a) the line ‘Recording of supervision data on-board the train’ is replaced by the following:

‘

Recording of monitoring data on-board the train	4.2.3.5 Appendix I	Recording device	4.2.9.6

’;

(b) the line ‘Route Compatibility and Train composition, Minimum elements relevant to professional qualification for the tasks associated with ‘accompanying trains’ is replaced by the following:

‘

Route Compatibility and Train composition Elements relevant to professional qualification for the tasks associated with ‘accompanying trains’	4.2.2.5 Appendix F	Operating documentation	4.2.12.4

’;

(30) in point 4.3.4, the table is replaced by: ‘

Reference this Regulation		Reference ENE TSI	
Parameter	Point	Parameter	Point
Route Compatibility and Train composition Route Book	4.2.2.5 4.2.1.2.2.	Maximum train current	4.2.4.1
Route Compatibility and Train composition Route Book	4.2.2.5 4.2.1.2.2.	Separation sections: Phase System	 4.2.15 4.2.16
Parameters for the vehicle and train compatibility over the route intended for operation	Appendix D1	Route compatibility checks before the use of authorised vehicles	7.3.5

’;

(31) in point 4.3.6, the line ‘Train Planning’ is replaced by the following: ‘

Train planning and timetable	4.2.3.1	Quieter routes	Appendix D

’;

(32) in point 4.4.3, the third and the fourth paragraphs are deleted;

(33) in point 4.6.1, last paragraph is replaced by the following:

‘Railway undertakings and Infrastructure managers shall define their own risk-based competence management system within their Safety Management Systems processes, in accordance with Annexes I and Annex II to Commission Delegated Regulation (EU) 2018/762*

Appendices F and G defines professional requirements relevant to the competence management system.’;

(34) in point 4.6.2.2, point (a), the third indent is replaced by the following:

‘— complete the forms associated with the use of the Book of European and national Instructions’;

(35) in points 4.6.3.1 and 4.6.3.2. the following text is deleted:

‘or Commission Regulations (EU) 1158/2010[15] and (EU) 1169/2010[16]

[15] Commission Regulation (EU) No 1158/2010 of 9 December 2010 on a common safety method for assessing conformity with the requirements for obtaining railway safety certificates (OJ L 326, 10.12.2010, p. 11).

[16] Commission Regulation (EU) No 1169/2010 of 10 December 2010 on a common safety method for assessing conformity with the requirements for obtaining a railway safety authorization (OJ L 327, 11.12.2010, p. 13).’;

(36) point 4.7.1 is replaced by the following:

‘4.7.1 Introduction

Staff identified in point 4.2.1.1 and executing safety-critical tasks as specified in the SMS of a RU or IM shall have appropriate fitness to ensure that overall operational and safety standards are met.

Railway undertakings and infrastructure managers shall set up and document the process they put in place to meet the medical, psychological and health requirements for their staff within their safety management system in accordance with EU Regulation 2016/762 defining common safety method on SMS.

Medical examinations as specified in point 4.7.2 and 4.7.3 on the individual fitness of staff shall be conducted by a person established as medical doctor or a psychologist qualified to carry out such examinations. The results must be accepted by every IM and RU as proof of fitness of staff or potential staff members.

Such examinations shall allow the member of staff executing safety-critical tasks to undertake similar tasks for another RU or IM, subject to the identification of additional medical, psychological and health requirements in the SMS of the RU or IM and to the satisfactory fitness of staff or potential staff members.

Fitness requirements set in point 4.7.2 and in point 4.7.3 are applicable to:

- Staff ‘accompanying trains’ other than the train driver;
- Staff undertaking the task of preparing trains;
- Staff undertaking the task of dispatching and authorising the movement of trains.

4.7.1.1 Alcohol , drugs and psychotropic medication limits

Staff shall not perform safety-critical tasks whilst vigilance is impaired by substances such as alcohol, drugs or psychotropic medication. Therefore, the railway undertaking and the infrastructure manager shall have in place procedures to control the risk that staff attend for work under the influence of such substances, or consume such substances at work.

European or National rules of the Member State where a train service is operated apply with regard to defined limits of the above mentioned substances.’;

(37) The title of point 4.7.2.1.1 is modified as follows:

“4.7.2.1.1. *Content of the medical examination*”;

(38) The second paragraph of point 4.7.2.1.2 is modified as follows:

“, as a minimum,” is deleted

(39) The title of point 4.7.2.2.2 is modified as follows:

“4.7.2.2.2. *Content of the periodic medical examination*”

(40) The first paragraph of point 4.7.2.2.2 is modified as follows:

“as a minimum” is deleted

(41) point 4.8.1 is replaced by the following:

‘

4.8.1. *Infrastructure*

The requirements for the rail infrastructure related data items with regard to the operation and traffic management subsystem, and which shall be made available to railway undertakings through RINF, are specified in Appendix D.

The infrastructure manager shall inform the railway undertaking of the changes on the infrastructure related data through RINF whenever such information becomes available and affects trains operation . The infrastructure manager is responsible for the accuracy of the data.

Until 15 December 2026, provided the necessary adaptations to RINF Application were implemented by the Agency , the infrastructure manager shall provide these information through other means free of charge as soon as possible and in electronic format to railway undertakings, authorised applicants for path requests and, where applicable, for the applicant referred to in Article 2(22) of Directive (EU) 2016/797.’;

(42) in point 6.2.1, the second and third paragraphs are replaced by the following:

'In accordance with Articles 9 and 10 of Directive (EU) 2016/798, railway undertakings and infrastructure managers shall demonstrate compliance with the requirements of this Regulation within their safety management system when applying for any new or amended safety certificate or safety authorisation in accordance with Commission Implementing Regulation (EU) 2018/763*.

The common safety methods on safety management system requirements as laid down by Delegated Regulation (EU) 2018/762 require national safety authorities to set up an inspection regime to supervise and monitor compliance with the safety management system in accordance with Commission Delegated Regulation (EU) 2018/761**, including all TSIs. None of the requirements contained within this Regulation require separate assessment by a Notified Body.

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* Commission Implementing Regulation (EU) 2018/763 of 9 April 2018 establishing practical arrangements for issuing single safety certificates to railway undertakings pursuant to Directive (EU) 2016/798 of the European Parliament and of the Council, and repealing Commission Regulation (EC) No 653/2007 (OJ L 129, 25.5.2018, p. 49).

** Commission Delegated Regulation (EU) 2018/761 of 16 February 2018 establishing common safety methods for supervision by national safety authorities after the issue of a single safety certificate or a safety authorisation pursuant to Directive (EU) 2016/798 of the European Parliament and of the Council and repealing Commission Regulation (EU) No 1077/2012 (OJ L 129, 25.5.2018, p. 16).';

(43) point 7.1 is replaced by the following:

'7.1. ***General rules for implementation***

In accordance with Article 9 of Directive (EU) 2016/798 and Article 5b of this Regulation, railway undertakings and infrastructure managers shall ensure compliance with this Regulation under their SMS, established following Delegated Regulation (EU) 2018/762.

7.1.1 ***Specific transition rules for Appendices A and C***

Infrastructure managers may postpone, in coordination with the railway undertakings operating on their networks and in accordance with Annex II point 5.1.1 of Delegated Regulation (EU) 2018/762, the implementation of Appendix A and Appendix C to 16 December 2025 at the latest. This is subject to the condition that the Agency and the concerned NSA receive not later than 16 June 2024:

(a) a commitment of implementation issued by the IM's management,

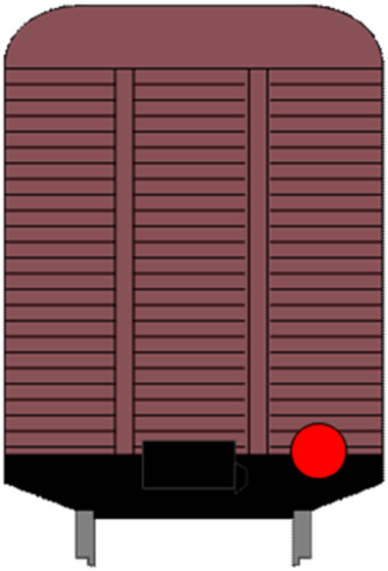
(b) an implementation plan of the IM, including training schedules, which sets the delays for the application of the modified operational procedures necessary and, where relevant, the implementation of the respective appropriate IT tools.

RUs shall provide training to drivers and relevant staff to operate trains in accordance with Appendix A and C by 16 December 2025 at the latest or any earlier date defined by the IM.';

(44) point 7.2.2.1 is replaced by the following:

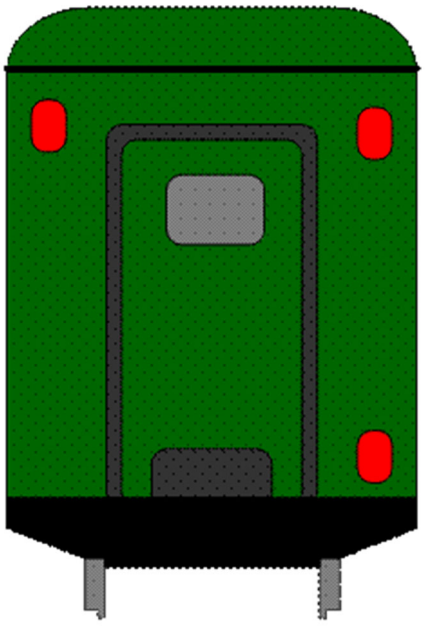
‘7.2.2.1. Permanent specific case (P) Estonia, Latvia, Lithuania, Poland, Hungary and Slovakia

For the implementation of point 4.2.2.1.3.2, freight trains which are operated solely on the 1520 mm gauge network of Estonia, Latvia, Lithuania, Poland, Hungary and Slovakia may use the following train rear end signal.



The reflective disc shall have a diameter of 185 mm with a red circle diameter of 140 mm. Where justified by operating practices, the reflective disc may be replaced with one reflective plate in compliance with Appendix E to WAG TSI.

For the implementation of point 4.2.2.1.3.1, passenger trains which are operated solely on the 1520 mm gauge network of Estonia, Latvia, Lithuania, Poland, Hungary and Slovakia may use 3 steady red lights as train rear end signal following the scheme:



This specific case does not prevent the access of TSI compliant rolling stock to their network.’;

(45) Appendix A is replaced by the following:

‘Appendix A

ERTMS OPERATIONAL PRINCIPLES AND RULES – version 6

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3. INTRODUCTION

3.1. PURPOSE AND STRUCTURE OF THE DOCUMENT

This Appendix sets out the principles and harmonised rules for the operation of ERTMS.

The structure of each rule is the following:

(i) title,

(ii) when necessary, situations in which the rule applies, presented in a frame, including the applicable ETCS levels; sometimes the situation is described for some specific sub-sections of the rules,

(iii) the rule itself.

When this Appendix refers to ETCS level 1 it applies to both applications, with or without trackside signals, unless otherwise stated.

When this Appendix refers to ETCS level 2 it applies to both applications, with or without trackside signals, unless otherwise stated.

The European Instructions referenced in this Appendix are listed under Appendix C2 to this TSI.

All language referring to people applies equally to male and female persons.

Part A is intentionally blank.

Part B contains the different ETCS operational train categories.

Part C contains the list of references to non-harmonised rules. In some situations a procedure is not related to ERTMS and therefore depends on non-harmonised rules.

The description of the technical functions for ETCS and GSM-R is contained in the corresponding system requirements specification.

If information displayed on the DMI does not require an action from the driver this information is not contained in the rules.

SCOPE AND FIELD OF APPLICATION

This Appendix is fully applicable to trains fitted with ETCS On-board units complying with the single set of specifications of Commission Regulation [*PO – CCS TSI 2023/XXXX*] with an operated system version X.Y up to and including 2.2. It is also applicable to On-board units complying with Set of specifications #2 or Set of specifications #3 and largely applicable to ETCS On-board units complying with Set of specifications #1 of Regulation (EU) 2016/919, provided that the DMI used fulfills the specification ERA_ERTMS_015560.

The scope is the following:

(i) ETCS level 0 application,

(ii) ETCS level 1 application whether or not trackside signals or infill are present,

(iii) ETCS level 2 application, whether or not trackside signals are present,

(iv) ETCS transitions between level 0, level 1 and level 2 applications,

(v) ETCS level NTC application

(vi) ETCS transitions to / from level NTC,

(vii) GSM-R.

Class B systems (even when operated through the ETCS DMI) are out of the scope.

The rules have been developed independently of other control command systems that may be present including where lines are equipped with ETCS level 1 / 2.

When ETCS level 1 or ETCS level 2 are implemented on lines fitted with other control command systems it is necessary to assess the applicability of these rules and if necessary supplement them with non-harmonised rules. This includes those lines fitted with both ETCS level 1 and ETCS level 2.

GSM-R voice radio operational rules are applicable on lines equipped with GSM-R independently of the control command system in use. Conversely, ETCS operational rules are applicable on lines equipped with ETCS independently of the voice radio system in use.

The applicability of the rules further depends on the engineering solutions adopted by the ERTMS trackside subsystem. In this context, some rules may not need to apply if the relevant functions are not implemented trackside (e.g. when track conditions are not transmitted or the level crossing procedure is not implemented); yet when a rule needs to apply, it will always do so in the way described in this Appendix .

All actions involving the driver assume his physical presence in the driver's cab, unless when required to examine a technical failure of the train at standstill, obtain signaller's instructions through a fixed lineside phone or when requested by the signaller or non-harmonised rules.

Throughout this Appendix , the ETCS On-board unit is assumed to be powered on if not otherwise stated. The desk of the active driving cab is assumed to be open unless otherwise stated.

An End of Authority (EOA) can be physically identified by means of an ETCS Stop Marker or an ETCS Location Marker. The EOA can also be identified by a lineside signal or other marker board with a stop indication. Under certain conditions, an EOA can also be at the train's front end.

4. REFERENCES, TERMS AND ABBREVIATIONS

4.1. INTENTIONALLY BLANK

4.2. TERMS & ABBREVIATIONS

Table 1 : Terms*

Term	Definition
Acknowledgement	Confirmation given by the driver to a request from the ETCS on-board that he/she has received information he/she needs to take into account.
Applicable speed limit (in SR)	The lowest speed limit of: - maximum speed for SR, - maximum train speed, - timetable / Route Book, - temporary speed restrictions (transmitted by other means than European Instruction 1, 2, 5, 6, 7 or 8), - European Instruction.
Authorisation for ERTMS train movement	Permission for a train to move given by means of: - a trackside signal at proceed aspect or, - an MA or, - a European Instruction: - to start after preparing a movement or, - to pass EOA or, - to proceed after trip.
Border crossing	Location where trains cross from a railway network in one Member State to a railway network in another Member State.
De-registration	Termination of the temporary relationship between the telephone number and the train running number. This action can be initiated by the user of a GSM-R radio, by automatic systems or by the network authority. The de-registration allows the de-registered train running number to be re-used.
Driver Machine Interface (DMI)	Train device to enable communication between the ETCS on-board and the driver.
Emergency propelling area	Area where propelling movements in RV are allowed.

Table 1 : Terms*

Term	Definition
Emergency stop order	ETCS order braking a train with the maximum brake force until the train is at a standstill.
ETCS Location Marker	Harmonised trackside ETCS marker board defined in EN 16494/2015[2] used to identify a potential EOA, e.g. the end of a block section.
ETCS on-board	The part of ETCS installed on a railway vehicle.
ETCS Stop Marker	Harmonised trackside ETCS marker board defined in EN 16494/2015 used to: - identify a potential EOA and - indicate the location where a driver has to stop the train, if running without an MA.
ETCS operational train category	Set of technical and / or operational characteristics of a train to which a specific ETCS speed profile applies.
Functional number (GSM-R)	Full number used within the functional addressing scheme to identify an end user or a system by function or role rather than by a specific item of radio equipment or user subscription. The functional number can be divided into two parts: - functional addressing (process of addressing a call using a specific number, representing the function a user is performing, rather than a number identifying the GSM-R on-board), - location dependent addressing (process of addressing a particular function – typically a signaller – based on the current location of the user – typically a train).
GSM-R mode	Status of the GSM-R on-board which provides functions for: - train movement, - or shunting movement.
GSM-R network	Radio network which provides GSM-R functions.

[2] EN 16494/2015 - Railway applications – Requirements for ERTMS Trackside Boards

Table 1 : Terms*

Term	Definition
GSM-R network marker	Harmonised trackside GSM-R signal defined in EN 16494/2015 to indicate the network to be selected.
GSM-R on-board	The part of GSM-R installed on a railway vehicle.
Maximum speed for RV	Maximum speed given from the ETCS trackside in RV.
Maximum speed for SR	Maximum speed given from the ETCS trackside in SR.
Movement Authority (MA)	Permission for a train to move to a specific location with supervision of speed.
Non-stopping area	Area defined by the Infrastructure Manager where it may not be safe or suitable to stop a train.
Override EOA speed	Maximum speed when the override EOA function is active.
Permitted speed	Maximum speed at which a train / shunting composition can run without ETCS warning and / or brake intervention.
Proceed aspect	Any signal aspect which permits the driver to pass the signal.
Propelling	Movement of a train where the driver is not in the leading cab of the leading vehicle.
Radio communication	Exchange of information between the ETCS on-board and the RBC / radio infill unit.
Radio Block Centre (RBC)	ETCS trackside centralised unit controlling ETCS train movements in level 2.
Radio hole	A pre-defined area where it is not possible to establish a reliable radio communication channel.
Registration	Temporary relationship between the telephone number and the train running number.

Table 1 : Terms*

Term	Definition
Release speed	Maximum speed at which a train is allowed to reach the end of its MA.
Revocation of MA	Withdrawal of a previous given Movement Authority.
Route Book	Description of the lines and the associated line-side equipment for the lines over which the driver will operate and relevant to the driving task.
Securing	Measures to be applied to avoid unintentional movement of railway vehicles.
Shunting movement	Way of moving vehicles without train data and controlled by shunting orders.
Tandem	Two or more traction units mechanically and pneumatically but not electrically coupled in the same train, each one requiring its own driver.
Temporary speed restriction	Reduction of the line speed for a limited period of time.
Text message	Information in writing displayed on the Driver Machine Interface.
Train data	Information which describes the characteristics of a train.
Train preparer	Staff in charge of the preparation of a train.
Transition	Controlled change between the different ETCS levels.
Transition point	Point where a transition between ETCS levels takes place.
Trip	Irrevocable application of the emergency brakes by ETCS until the train / shunting movement is at a standstill.

Table 2 : Abbreviations *

Abbreviation	
AD	Automatic Driving mode
ATO	Automated Train Operation
BMM	Big Metal Mass
BTM	Balise Transmission Module
DAS	Driver Advisory System
DMI	Driver Machine Interface
EOA	End Of Authority
ERTMS	European Rail Traffic Management System
ETCS	European Train Control System
FS	Full Supervision mode
G	Goods train braking mode
GSM-R	Global System for Mobile communication - Railway
IM	Infrastructure Manager
LS	Limited Supervision mode
MA	Movement Authority
NL	Non-Leading mode
NTC	National Train Control system
OS	On Sight mode
P	Passenger train braking mode
RBC	Radio Block Centre
REC	Radio Emergency Call
RU	Railway Undertaking
RV	Reversing mode

Table 2 : Abbreviations *

Abbreviation	
SH	Shunting mode
SL	Sleeping mode
SN	National System
SR	Staff Responsible mode
STM	Specific Transmission Module
TIMS	Train Integrity Monitoring System
UN	Unfitted mode
VBC	Virtual Balise Cover

* For a complete list of ERTMS terms and abbreviations refer to Subset 023 'Glossary of Terms and Abbreviations' under Appendix A of *[PO – CCS TSI Commission Regulation (EU) 2023/XXXX]*.

5. PRINCIPLES

5.1. PRINCIPLES FOR ETCS

5.1.1. CAB-SIGNALLING

The driver shall observe the displayed information on the DMI and shall react as required by this Appendix.

The driver may, depending on the trackside implementation, be required to take into account the harmonised marker boards defined in EN 16494:2015 - Railway applications – Requirements for ERTMS Trackside Boards as well as other non-harmonised trackside information.

5.1.2. KNOWLEDGE OF OPERATING LEVEL

The driver and the signaller shall always operate according to the ETCS rules that are particular to the specific operating ETCS level.

When more than one ETCS levels are coexisting, the signaller shall ascertain what ETCS level the concerned train is operating in before issuing any instruction to the driver.

5.1.3. INTENTIONALLY BLANK

5.1.4. INTENTIONALLY BLANK

5.1.5. INTENTIONALLY BLANK

5.1.6. AUTHORISATION TO START A MOVEMENT IN SR

The driver shall be authorised by the signaller to start a movement in SR by means of European Instruction 7, except in case of starting a movement in ETCS level 1 / 2 with trackside signals.

5.1.7. SPEED RESTRICTIONS IN SR

The signaller shall give all speed restrictions lower than the maximum speed for SR to the driver of a train running in SR by means of a European Instruction 1, 2, 5, 6, 7 or 8 except if the driver is informed by a dedicated document/computer medium about these speed limitations.

5.1.8. AUTHORISATION TO PASS AN EOA

The driver shall only be authorised to pass an EOA by the signaller by means of a European Instruction 1 or 7.

5.1.9. TRAINS / SHUNTING MOVEMENTS BEING TRIPPED

After a trip has occurred, the driver shall restart in the initial or opposite direction only if he/she has received authorisation by means of a European Instruction 2 from the signaller.

5.1.10. ETCS STOP MARKER

The driver shall stop on the approach to an ETCS Stop Marker:

(i) indicating the EOA of the current MA, or

(ii) when running without an MA unless he/she has received a specific authorisation from the signaller by means of European Instruction 1 or 7.

5.1.11. ETCS LOCATION MARKER

The driver shall stop on the approach to an ETCS Location Marker:

(i) indicating the EOA of the current MA, or

(ii) when running without an MA if he/she has received a specific order from the signaller.

5.2. INTENTIONALLY BLANK

6. ETCS OPERATIONAL RULES

6.1. PUTTING THE ETCS ON-BOARD INTO SERVICE

The driver switches the ETCS on-board on. Levels 0, 1, 2, NTC

6.1.1. Entering data during start of mission

When requested by the ETCS on-board, the driver shall enter, re-enter or re-validate the driver identification, the train running number, the ETCS level, the radio network identification and the RBC identification and phone number.

In case the following text message is displayed:

'Radio network registration failed'

the driver shall enter the radio network identification.

6.1.2. Manual change of data

If a change is required, the driver shall enter/modify and validate:

(i) the train running number.

(ii) the driver identification while at standstill or, if allowed by national value, while running.

(iii) the ETCS level, the radio network identification and the RBC identification and phone number while at standstill.

6.2. PREPARING A MOVEMENT

The ETCS on-board is in service. Levels 0, 1, 2, NTC

In ETCS level 2, in case the train is rejected the driver shall apply rule 'Reacting to unexpected situations when preparing a train movement' (section 6.40.2).

6.2.1. The traction unit has to move as a train

The driver shall:

(i) apply rule 'Entering train data during train preparation' (section 6.4.1),

(ii) select 'Start'.

In case an acknowledgement for SR is requested, the driver shall apply rule 'The traction unit has to move as a train and an acknowledgement for SR is requested' (section 6.2.4).

In case an acknowledgement for SH is requested in ETCS level 2, the driver shall apply rule 'Reacting to unexpected situations when preparing a train movement' (section 6.40.1).

6.2.2. The traction unit has to move in SH

The driver shall prepare for shunting and apply rule 'Performing shunting movements in SH' (section 6.3).

6.2.3. The traction unit has to move in NL

The driver of the non-leading traction unit shall prepare for tandem movement and apply rule 'Performing a tandem movement' (section 6.32).

6.2.4. The traction unit has to move as a train and an acknowledgement for SR is requested

Levels 1 without trackside signals, 2 without trackside signals

When the following symbol is displayed with a flashing frame:

The driver shall inform the signaller, receive authorisation to start in SR by means of European Instruction 7 and acknowledge.

Before authorising a driver to start in SR, the signaller shall, according to non-harmonised rules:

1. check if all the conditions for the route are met,

(i) check all restrictions and / or instructions that are necessary and include them in European Instruction 7,

(ii) check for temporary speed restrictions to be included in European Instruction 7.

If the train is located at an ETCS Stop Marker

The signaller shall authorise the driver to pass this ETCS Stop Marker by means of European Instruction 7. This authorisation is valid from this ETCS Stop Marker to the next one. If the conditions allow, the Signaller can authorise the driver to pass this second ETCS Stop Marker as well using the same European Instruction 7. The authorisation is then valid up to the ETCS Stop Marker following the second one in the direction of travel.

The driver shall:

(i) receive European Instruction 7 from the signaller,

(ii) check the applicable speed limit,

(iii) use, unless instructed not to do so, the override function for each of the ETCS Stop Markers to be passed and wait for the following symbol:

(iv) start the train,

(v) not exceed the override EOA speed while this symbol is displayed.

If the train is not located at an ETCS Stop Marker

The signaller shall authorise the driver to start by means of European Instruction 7. This authorisation is valid from the current location of the train to the first ETCS Stop Marker in the direction of travel. If the conditions allow, the signaller can authorise the driver to pass this as well as the next ETCS Stop Marker by means of the same European Instruction 7. This authorisation is then valid up to the ETCS Stop Marker following the last one authorised by the European Instruction 7 to be passed.

The driver shall:

(i) receive European Instruction 7 from the signaller,

(ii) check the applicable speed limit,

(iii) start the train

(iv) when approaching an ETCS Stop Marker and if authorised by the European Instruction 7 to pass it, use, unless instructed not to do so, the override function and wait for the following symbol:

(v) start the train or continue moving,

(vi) not exceed the override EOA speed while this symbol is displayed.

It is possible to provide more than one European Instructions for an equal number of consecutive ETCS Stop Markers to be passed.

If the signaller can establish that the track up to the end of the authorisation to be issued is free then he/she may exempt the driver from running on sight in SR.

Levels 1 with trackside signals, 2 with trackside signals

When the following symbol is displayed with a flashing frame:

The driver shall apply rule 6.14 ‘Running in SR’ (section 6.14).

6.2.5. The traction unit has to move in SL

The driver / train preparer shall make sure that all driving desks of any non-leading traction unit, which is electrically connected to and will be remotely controlled from the leading one, are closed and remain so as long as this traction unit is remotely controlled from the leading one.

6.3. PERFORMING SHUNTING MOVEMENTS IN SH

Rolling stock has to be moved in SH. Levels 1, 2

6.3.1. Manual entry into SH

The driver shall select ‘Shunting’ according to non-harmonised rules.

6.3.2. Automatic entry into SH

When the following symbol is displayed with a flashing frame:

the driver shall:

(i) first ensure he/she has the correct information concerning the movement he/she is to perform,

(ii) then acknowledge.

6.3.3. Running in SH

When the following symbol is displayed:

the driver shall apply non-harmonised rules.

6.3.4. Maintain SH when changing the cab

When the shunting procedure requires the use of different cabs the driver is allowed to select ‘Maintain Shunting’ before closing the driving desk.

6.3.5. Exit from SH

When all shunting movements to be performed in SH are finished the driver shall:

(i) select ‘Exit Shunting’,

(ii) ensure that no traction unit remains in the ‘Maintain Shunting’ status.

6.3.6. SH not granted

Level 2

When one of the following text messages is displayed:

‘SH refused’

‘SH request failed’

the driver shall inform the signaller about the situation.

The driver and signaller shall apply non-harmonised rules.

6.3.7. Passing a defined border of a shunting area

When a shunting movement needs to pass a defined border of a shunting area the driver and signaller shall apply non-harmonised rules.

6.4. ENTERING TRAIN DATA

Train Data have to be entered or modified. Levels 0, 1, 2, NTC

6.4.1. Entering train data during train preparation

The driver / train preparer shall enter/modify and validate all of the following train data if this data is not pre-configured on-board or received from ETCS external sources:

(i) ETCS operational train category,

(ii) train length,

(iii) brake percentage,

(iv) maximum train speed,

(v) axle load category,

(vi) train fitted with airtight system,

(vii) loading gauge,

(viii) additional data for the available STMs,

(ix) specific data for ATO, if requested.

Before confirming train data that are pre-configured on-board or received from ETCS external sources and that are modifiable by the driver, the train preparer shall make sure the train data and the train composition match.

6.4.2. Manual change of train data

After each modification of the composition of the train and after a technical problem that leads to a change of the train data, the train preparer / driver shall:

(i) determine the new train data,

(ii) enter the new train data,

(iii) validate the new train data.

6.4.3. Change of train data by ETCS external sources

When the following text message is displayed on the DMI:

'Train data changed'

a) if the change of train data leads to an application of the brake

When at a standstill, the driver shall:

(i) acknowledge the brake application,

(ii) modify and/or validate the train data if requested by the on-board system,

(iii) take into account the modified train data.

In ETCS level 1, and in ETCS level 2 if no new MA is received, the signaller shall authorise the driver to pass the EOA (rule 'Authorising the passing of an EOA'- section 6.39).

b) in all other cases

The driver shall take into account the modified train data.

6.5. INTENTIONALLY BLANK

6.6. INTENTIONALLY BLANK

6.7. ENTERING AND OPERATING IN ETCS LEVEL 0

6.7.1. Announcement

The train is approaching an ETCS level 0 area. Levels 1, 2, NTC

When a transition to ETCS level 0 is announced by displaying the following symbol:

the driver shall apply non-harmonised rules.

6.7.2. Acknowledgement

When the following symbol is displayed with a flashing frame:

the driver shall acknowledge.

6.7.3. Running

The train is running in an ETCS level 0 area.

When the following symbol is displayed:

the driver shall apply non-harmonised rules.

6.8. ENTERING AND OPERATING IN ETCS LEVEL 1

6.8.1. Announcement

The train is approaching an ETCS level 1 area. Levels 0, 2, NTC

When a transition to ETCS level 1 is announced by displaying the following symbol:

the driver shall prepare to apply rules for ETCS level 1.

6.8.2. Intentionally blank

6.8.3. Running

The train is running in an ETCS level 1 area.

When the following symbol is displayed:

the driver shall apply rules according to ETCS level 1.

6.9. ENTERING AND OPERATING IN ETCS LEVEL 2

6.9.1. Announcement

The train is approaching an ETCS level 2 area. Levels 0, 1, NTC

When a transition to ETCS level 2 is announced by displaying the following symbol:

the driver shall prepare to apply rules for ETCS level 2.

6.9.2. Intentionally blank

6.9.3. Running

The train is running in an ETCS level 2 area.

When the following symbol is displayed:

the driver shall apply rules according to ETCS level 2.

When requested by the signaller to manually confirm train integrity on the DMI, the driver shall do so only at standstill and according to RU rules.

6.10. INTENTIONALLY BLANK

6.11. ENTERING AND OPERATING IN ETCS LEVEL NTC

6.11.1. Announcement

The train is approaching an ETCS level NTC area. Levels 0, 1, 2

When a transition to ETCS level NTC is announced by displaying a symbol indicating the name of the applicable NTC, as example:

the driver shall apply non-harmonised rules.

A specific symbol for each NTC exists.

6.11.2. Acknowledgement

When the symbol indicating the applicable NTC is displayed with a flashing frame, as example:

the driver shall acknowledge.

A specific symbol for each NTC exists.

6.11.3. Running

The train is running in an ETCS level NTC area.

When the symbol indicating the entered NTC is displayed, as example:

the driver shall apply non-harmonised rules.

A specific symbol for each NTC exists.

6.12. RUNNING IN FS

Levels 1, 2

When the following symbol is displayed:

the driver

(i) shall not exceed the permitted speed

(ii) may, if DAS information is available on-board:

- follow the target advice speed when displayed on the DMI
- coast when  is displayed
- respect the stopping points if indicated
- request a stopping point to be skipped if instructed and this option is available on the DMI
- operate the doors when invited to do so by relevant DMI indications

In ETCS level 1 with trackside signals the driver is authorised to proceed without a new MA when the trackside signal shows a proceed aspect.

If in addition the following text message is displayed:

‘Entering FS’

the driver shall not exceed speed restrictions that apply for the part of the train that is not covered by the FS MA.

6.13. RUNNING IN OS

Levels 1, 2

When the following symbol is displayed with a flashing frame:

the driver shall:

(i) acknowledge,

(ii) start or continue applying rule 9 of Appendix B2.

When the following symbol is displayed:

the driver shall:

(i) apply rule 9 of Appendix B2 as long as this symbol is displayed,

(ii) not exceed the permitted speed.

If in addition the following text message is displayed:

‘Entering OS’

the driver shall not exceed speed restrictions that apply for the part of the train that is not covered by the OS MA.

6.14. RUNNING IN SR

Levels 1, 2

When the following symbol is displayed with a flashing frame:

the driver shall:

(i) first receive an authorisation for ERTMS train movement,

(ii) check the applicable speed limit,

(iii) then acknowledge.

When the following symbol is displayed:

the driver shall:

(i) run on sight, unless a European Instruction 1, 2 or 7 exempts him from running on sight in SR,

(ii) not exceed the applicable speed limit,

(iii) in ETCS level 1 without trackside signals and in ETCS level 2 without trackside signals, when approaching the next ETCS Stop Marker inform the signaller and apply rule ‘Authorizing the passing of an EOA’ (section 6.39) unless already authorized to pass this ETCS Stop Marker by means of a European Instruction.

It is possible to provide more than one European Instructions for an equal number of consecutive ETCS Stop Markers to be passed.

6.15. RUNNING IN LS

Levels 1, 2

When the following symbol is displayed with a flashing frame:

the driver shall acknowledge according to non-harmonised rules.

When the following symbol is displayed:

the driver shall apply non-harmonised rules.

6.16. RUNNING IN UN

Level 0

When the following symbol is displayed with a flashing frame:

the driver shall acknowledge according to non-harmonised rules.

When the following symbol is displayed:

the driver shall apply non-harmonised rules.

6.17. RUNNING IN SN

Level NTC

When the following symbol is displayed with a flashing frame:

the driver shall acknowledge according to non-harmonised rules.

When the following symbol is displayed:

the driver shall apply non-harmonised rules.

6.18. APPROACHING AN EOA WITH A RELEASE SPEED INDICATION

Levels 1, 2

When the train is approaching an EOA and a release speed is displayed on the DMI, the driver is authorised:

(i) to approach a signal, an ETCS Stop Marker, an ETCS Location Marker or a buffer stop which is a short distance behind the EOA indicated on the DMI without exceeding the release speed,

(ii) in ETCS level 1 with trackside signals to proceed without exceeding the release speed when the trackside signal shows a proceed aspect.

6.19. MANAGING A TRACK AHEAD FREE REQUEST

The train is at a standstill or approaching a trackside signal, or an ETCS Stop Marker / ETCS Location Marker. Level 2

When the following symbol is displayed:

the driver is allowed to confirm that the track ahead is free if he/she can ascertain that the track section between the head of the train and the next trackside signal, ETCS Stop Marker or ETCS Location Marker is free.

6.20. PASSING A SECTION WITH LOWERED PANTOGRAPH(S)

The train is approaching a section of the line to be passed with lowered pantograph(s). Levels 1, 2

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered


*

the driver shall lower the pantograph(s), taking into account their position.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered


*

the driver shall keep the pantograph(s) lowered.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered


*

the driver is authorised to raise the pantograph(s), taking into account their positions.

** For the exact dimensions and layout of the marker boards, EN 16494/2015 needs to be used*

6.21. CHANGING THE ELECTRIC POWER SUPPLY

The train is approaching a section of the line where the electric power supply must be changed. Levels 1, 2

When one of the following symbols is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, one of the following marker boards is encountered:

the driver shall change the electric power supply accordingly.

When one of the following symbols is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, one of the following marker boards is encountered:

the driver shall ensure that the power supply has changed accordingly.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered:

the driver is informed about approaching a line without any traction system.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered:

the driver is informed about reaching a line without any traction system.

6.22. PASSING A SECTION WITH MAIN POWER SWITCH SWITCHED OFF

The train is approaching a section of the line where the main power switch must be switched off. Levels 1, 2

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered

the driver shall switch off the main power switch, taking into account the position of the pantographs, or, if allowed by the Infrastructure Manager, keep the main power switch on and refrain from applying traction.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered

the driver shall keep the main power switch switched off or, if allowed by the Infrastructure Manager, continue to refrain from applying traction.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered

the driver is authorised to switch on the main power switch, taking into account the position of the pantographs, and is allowed to apply traction again.

** For the exact dimensions and layout of the marker boards, EN 16494:2015 needs to be used*

6.23. PASSING A NON-STOPPING AREA

The train is approaching a non-stopping area. Levels 1, 2

When the following symbol is displayed:

the driver is notified of an upcoming area in which he/she shall avoid stopping.

When the following symbol is displayed:

the driver shall avoid stopping.

6.24. PASSING A SECTION WITH INHIBITION OF MAGNETIC SHOE BRAKE

The train is approaching a section of the line where the magnetic shoe brake shall not be used. Levels 1, 2

When the following symbol is displayed:

the driver shall release the magnetic shoe brake, if applied, except in an emergency.

When the following symbol is displayed:

the driver shall not use the magnetic shoe brake except in an emergency.

6.25. PASSING A SECTION WITH INHIBITION OF EDDY CURRENT BRAKE

The train is approaching a section of the line where the eddy current brake shall not be used. Levels 1, 2

When the following symbol is displayed:

the driver shall release the eddy current brake, if applied, except in an emergency.

When the following symbol is displayed:

the driver shall not use the eddy current brake except in an emergency.

6.26. PASSING A SECTION WITH INHIBITION OF REGENERATIVE BRAKE

The train is approaching a section of the line where the regenerative brake shall not be used. Levels 1, 2

When the following symbol is displayed:

the driver shall release the regenerative brake, if applied, except in an emergency.

When the following symbol is displayed:

the driver shall not use the regenerative brake except in an emergency.

6.27. PASSING A PRESSURE SEAL SECTION

The train is approaching a section of the line where the air condition intakes are to be closed. Levels 1, 2

When the following symbol is displayed:

the driver shall close the air conditioning intakes.

When the following symbol is displayed:

the driver shall keep the air conditioning intakes closed.

When the following symbol is displayed:

the driver is authorised to open the air conditioning intakes.

6.28. SOUNDING THE AUDIBLE WARNING DEVICE

Levels 1, 2

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered:

the driver shall apply the audible warning device unless prevented by non-harmonised rules.

6.29. CHANGING OF ADHESION FACTOR

The train is in a section of line where the adhesion factor could be changed. Levels 1, 2

If the national value allows the driver to select ‘Slippery rail’, he/she may do so when the adhesion conditions are poor or when informed by the signaller. If the driver is not informed by the signaller before selecting ‘Slippery rail’, the driver shall inform the signaller.

When a signaller is informed about poor adhesion conditions, he/she shall activate the ETCS reduced adhesion function, where possible, and if this is not possible he/she shall take measures as prescribed by the IM, until normal operation is restored.

When the following symbol is displayed:

the driver shall apply internal RU rules.

6.30. PASSING A RADIO HOLE

The train is in a section of line without radio coverage. Level 2

When the following symbol is displayed:

the driver may continue on any valid movement authority.

If the driver reaches the end of authority and the symbol is still displayed, the driver shall inform the signaller. The signaller and driver shall apply rule 'Authorising the passing of an EOA' (section 6.39).

6.31. INTENTIONALLY BLANK

6.32. PERFORMING A TANDEM MOVEMENT

A non-leading traction unit is coupled to the leading traction unit (or to a train including the leading traction unit). Levels 0, 1, 2, NTC

6.32.1. Entry into NL

The driver of the non-leading traction unit shall select 'Non-Leading'.

When the following symbol is displayed on the DMI:

the driver of the non-leading traction unit shall confirm to the driver of the leading traction unit that the non-leading traction unit is in NL.

6.32.2. Performing the tandem movement

Both drivers shall apply internal RU rules.

6.32.3. Exit from NL

When the train is at a standstill the driver of the non-leading traction unit shall:

(i) apply the brakes,

(ii) confirm to the driver of the leading traction unit that the non-leading traction unit is no longer in NL.

6.33. REVOKING AN AUTHORISATION FOR ERTMS TRAIN MOVEMENT

The signaller decides to change existing traffic arrangements. Levels 1, 2

6.33.1. Measures before making traffic arrangements

(a) In case the co-operative shortening of the MA is possible

If possible in ETCS level 2 the signaller shall revoke an MA by the use of the co-operative shortening of MA.

(b) In all other cases

In all other cases, the signaller shall apply non-harmonised rules to stop the train if it is not already at standstill.

Once the train is at a standstill and before making traffic arrangements, the signaller shall order the driver to remain at a standstill by means of European Instruction 3 or other available means and to delete any MA remaining on-board if required ..

6.33.2. To restart the trains

To restart the trains the signaller shall:

(i) issue an authorisation for ERTMS train movement,

(ii) revoke European Instruction 3 if one has been issued.

6.34. TAKING MEASURES IN THE EVENT OF AN EMERGENCY

An emergency situation occurs. Levels 1, 2

6.34.1. To protect the trains

When a member of staff discovers an emergency situation, he/she shall apply rule 14 of Appendix B2.

To stop trains in ETCS level 2, the signaller may use the emergency stop order; the emergency stop order shall not be revoked before it is safe for these trains to restart.

The signaller may use European Instruction 3 to keep the stopped trains at standstill if required.

When the following text message is displayed:

'Emergency stop'

and the train is tripped, the driver shall apply rule 'Responding to a trip' (section 6.41).

6.34.2. To restart the trains

The signaller shall:

(i) decide if it is possible to authorise train movement,

(ii) decide if instructions and / or restrictions for train movement are necessary,

(iii) revoke the emergency stop order if one has been issued,

(iv) revoke European Instruction 3 if one has been issued

(v) give authorisation to the drivers to restart.

To restart trains that have not been tripped and if instructions and / or restrictions are necessary the signaller shall issue a European Instruction(s). In ETCS level 1 with trackside signals the driver shall run on sight up to the next trackside signal.

To restart trains that have been tripped, the signaller and driver shall apply rule 'Responding to a trip - to restart' (section 6.41.2).

6.34.3. To protect and restart shunting movements

The signaller and driver shall apply non-harmonised rules.

6.35. STOPPING IN A SAFE AREA

The driver needs to stop the train in a safe area. Levels 1, 2

The driver shall toggle-on the display of the indication of the safe areas where the train can stop.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered:

and the driver decides to stop at the indicated safe area he/she shall take into account the remaining distance displayed on the DMI or the distance up to the marker board marking the start of the safe area.

When the following symbol is displayed:

or, when running without an MA or if this functionality is not supported by the trackside, the following marker board is encountered:

and the driver decides to stop at the indicated safe area, he/she shall stop the train taking into account its length.

When the following marker board is encountered:

the driver is informed that he/she has reached the end of the safe area.

6.36. PROPELLING IN RV

A train has to be moved in the reverse direction inside an emergency propelling area. Levels 1, 2

6.36.1. Preparing the movement to be performed in RV

When the train is at a standstill and the following symbol is displayed:

the driver shall trigger the transition to RV while informing the signaller if possible and taking into account any further instructions.

6.36.2. Running in RV

When the following symbol is displayed with a flashing frame:

the driver shall:

(i) acknowledge,

(ii) propel the train following any instructions given by the signaller as soon as the following symbol is displayed:

(iii) not exceed the maximum speed for RV,

(iv) not exceed the permitted distance to run.

6.36.3. Exceeding the permitted distance in RV

When the following text message is displayed with a flashing frame:

'RV distance exceeded',

the driver shall:

(i) report to the signaller,

(ii) acknowledge at a standstill if the permitted distance in RV has not been extended,

(iii) release the brake.

6.36.4. Exit from RV

After the train has completed its propelling and as soon as it is at a standstill the driver shall report to the signaller. If no additional movement in RV is required the driver shall close the driving desk to exit RV.

6.37. REACTING TO UNINTENTIONAL MOVEMENTS

After being at a standstill the train / shunting composition has moved unintentionally and the ETCS on-board has triggered the brake. Levels 1, 2

When the following text message is displayed:

‘Runaway movement’,

the driver shall secure the train / shunting composition according to internal RU rules and acknowledge the brake application.

6.38. MANAGING ROUTE UNSUITABILITY DETECTED BY THE ON-BOARD SYSTEM

Levels 1, 2

When any of the following messages is displayed:

‘Route unsuitable - loading gauge’

‘Route unsuitable - traction system’

‘Route unsuitable – axle load category’

a route unsuitability is detected.

The driver shall stop the train using service brake.

The driver shall inform the signaller and follow any instructions given.

6.39. AUTHORISING THE PASSING OF AN EOA

It is necessary to authorise a driver to pass an EOA. Levels 1, 2

Before authorising a driver to pass an EOA by means of European Instruction 1 the signaller shall, according to non-harmonised rules:

(i) check if all the conditions for the route are met,

(ii) check all restrictions and / or instructions that are necessary and include them in European Instruction 1,

(iii) check for temporary speed restrictions to be included in European Instruction 1.

If the signaller can establish that the track up to the end of the authorisation to be issued is free then he/she may exempt the driver from running on sight in SR .

It is possible to provide more than one European Instructions for an equal number of consecutive ETCS Stop Markers to be passed.

To pass the EOA, the driver shall:

(iv) receive European Instruction 1 from the signaller for this EOA,

(v) check the applicable speed limit,

(vi) use the override function, and

(vii) when the following symbol is displayed:

start the train or continue moving,

not exceed the override EOA speed while this symbol is displayed.

6.40. REACTING TO UNEXPECTED SITUATIONS WHEN PREPARING A TRAIN MOVEMENT

Level 2

6.40.1. The traction unit has to move as a train but an acknowledgement for SH is requested

When the following symbol is displayed with a flashing frame:

the driver shall inform the signaller about the situation, then acknowledge and proceed according to the instructions received from the signaller.

6.40.2. The train is rejected

When the following text message is displayed on the DMI:

‘Train is rejected’

the driver shall inform the signaller about the situation. The driver and signaller shall apply non-harmonised rules.

6.41. RESPONDING TO A TRIP

A train or a shunting movement is tripped. Levels 1, 2

6.41.1. Immediate measures

When the following symbol is displayed:

the driver shall assume that there is a potentially dangerous situation and he/she shall perform all actions necessary to avoid or reduce the effect of this situation. This may include moving the train / shunting composition backwards.

When the following symbol is displayed with a flashing frame:

the driver shall acknowledge and apply the brakes.

(a) In case an immediate backward movement is necessary due to an emergency

When the driver decides or is instructed by the signaller to move the train / shunting composition backwards due to an emergency

and

when the following symbol is displayed:

the driver shall move the train / shunting composition backwards following any instructions given by the signaller.

As soon as the train / shunting composition is at a standstill, the driver shall inform the signaller about the situation.

(b) In all other cases

When the following symbol is displayed:

the driver shall inform the signaller about the situation and follow any instructions given.

6.41.2. To restart

(a) In the initial direction

Before giving authorisation to the driver to proceed after a trip by means of European Instruction 2 the signaller shall, according to non-harmonised rules:

(i) check if all the conditions for the route are met,

(ii) check all restrictions and / or instructions that are necessary and include them in European Instruction 2,

(iii) check for temporary speed restrictions to be included in European Instruction 2.

If the signaller can establish that the track up to the end of the authorised movement is free then he/she may exempt the driver from running on sight in SR .

To proceed the driver shall:

(i) receive European Instruction 2 with all additional instructions given by the signaller,

(ii) according to the task to be performed select ‘Start’ or ‘Shunting’ and follow the instructions given in European Instruction 2,

(iii) restart the train / shunting movement.

If in ETCS level 2, at any step of the procedure, the following text message is displayed:

‘Communication error’,

the driver shall inform the signaller about the situation. The signaller and driver shall apply rule ‘Authorising the passing of an EOA’ (section 6.39). In this case, European Instruction 1 shall be issued by the signaller instead of European Instruction 2.

(b) In the opposite direction

The signaller shall order the driver to remain at standstill and to perform End of Mission by means of European Instruction 3, and then to restart in the opposite direction by means of European Instruction 7.

The driver shall carry out the End of Mission and then apply rule ‘Putting the on-board into service’ (section 6.1) and rule ‘Preparing a movement’ (section 6.2). If the driver is not operating from the leading cab, he/she shall apply internal RU rules to ensure safe running.

6.41.3. No movement required after a trip

In the case of a train / shunting composition not required to be moved after a trip, the signaller shall order the driver to remain at standstill and to perform End of Mission by means of European Instruction 3.

6.41.4. Trip in SH when passing a defined border of a shunting area

Levels 1, 2

When a shunting movement is tripped when passing a defined border of a shunting area the driver and signaller shall apply non-harmonised rules.

6.42. MANAGING AN ETCS TRACKSIDE MALFUNCTION

The on-board receives the information of an ETCS trackside equipment malfunction. Levels 1, 2

When the following text message is displayed:

'Trackside malfunction',

the driver shall inform the signaller about the situation.

6.43. MANAGING INCOMPATIBILITY BETWEEN ETCS TRACKSIDE AND ETCS ON-BOARD

An incompatibility between ETCS trackside and ETCS on-board is detected by the system and the train is tripped. Levels 1, 2

When the following text message is displayed:

'Trackside not compatible',

the train cannot continue in ETCS.

The driver shall apply rule 'Responding to a trip' (section 6.41).

6.44. MANAGING A LEVEL CROSSING NOT PROTECTED

The train is approaching a level crossing which is not protected. Levels 1, 2

6.44.1. If in FS, OS or LS

When the following symbol is displayed:

the driver shall apply rule 7 of Appendix B2.

6.44.2. If in SR

When the following text message is displayed:

'Level crossing not protected',

the driver shall apply rule 7 of Appendix B2.

6.45. MANAGING A BALISE READ ERROR

A balise read error occurs and the brakes are triggered by the ETCS on-board (the train is not tripped). Levels 1, 2

When the following text message is displayed:

'Balise read error',

and the train is not tripped, the driver shall inform the signaller about the situation.

If no new MA is received when the train has come to a standstill, the signaller shall authorise the driver to pass the EOA by applying rule 'Authorising the passing of an EOA' (section 6.39).

If the situation is repeated, the driver and signaller shall apply non-harmonised rules.

6.46. MANAGING A FAILED LEVEL TRANSITION

The transition takes place but no MA valid beyond the transition point is received on-board or the transition does not take place when passing the transition point. Levels 1, 2

The ETCS level transition point may be marked through the following trackside marker board:

** For the exact dimensions and layout of the marker board, EN 16494:2015 needs to be used*

6.46.1. If the train has been tripped

The driver and signaller shall apply rule 'Responding to a trip' (section 6.41).

After selecting 'Start' the driver shall:

(i) check the correct ETCS level to be selected,

(ii) change the ETCS level (rule 'Manual change of data' (section 6.1.2)),

and then restart the train.

In case the ETCS level to be selected is not available on-board, the driver and signaller shall apply rule 15 of Appendix B2.

6.46.2. If in SR

The driver shall:

(i) stop the train,

(ii) apply the following rule 'In all other cases' (section 6.46.3).

6.46.3. In all other cases

The driver shall:

(i) inform the signaller about the situation,

(ii) when at a standstill, check the correct ETCS level to be selected,

(iii) change the ETCS level (rule 'Manual change of data' (section 6.1.2)),

and then restart the train.

In case the ETCS level to be selected is not available on-board, the driver and signaller shall apply rule 15 of Appendix B2.

6.47. MANAGING ABSENCE OF RBC INFORMATION

There is no RBC information received in an area not identified as a radio hole and the brakes are triggered by the ETCS on-board (the train is not tripped). Level 2

When the following text message is displayed:

'Communication error',

the driver shall inform the signaller about the situation when at a standstill.

If no new MA is received when the train has come to a standstill, the signaller shall authorise the driver to pass the EOA by applying rule 'Authorising the passing of an EOA' (section 6.39).

6.48. MANAGING A RADIO COMMUNICATION FAILURE

An ETCS radio communication failure occurs. Levels 0, 1, 2, NTC

When the following symbol is displayed:

the driver shall check the ETCS level, the radio network identification, the RBC identification and phone number, and correct them if necessary (rule 'Manual change of data' (section 6.1.2)).

If the radio communication with the RBC still cannot be established, the driver shall inform the signaller about the situation.

(a) when in ETCS level 2preparing a movement and the traction unit has to move in SH

The driver and the signaller shall apply non-harmonised rules.

(b) when in ETCS level 2preparing a tandem movement

The driver of the non-leading traction unit shall inform the driver of the leading traction unit about the radio communication failure. Both drivers shall apply internal RU rules.

(c) in all other cases

The signaller shall authorise the driver to pass the EOA by applying rule 'Authorising the passing of an EOA' (section 6.39).

6.49. MANAGING A FAILURE OF SELF TEST

Levels 0, 1, 2, NTC

When the information about the failure of an ETCS device is shown to the driver, he/she shall switch off the ETCS on-board and then switch it on again to trigger a new self test. If the same information is shown again, the driver shall attempt to troubleshoot the problem using the applicable technical information. If this attempt fails or is not possible, the driver shall inform the signaller about the situation.

The driver shall request a change of traction unit.

If the traction unit must be moved the driver and signaller shall apply rule 15 of Appendix B2.

6.50. MANAGING A FAILURE AFFECTING THE ON-BOARD RADIO EQUIPMENT

Levels 0, 1, 2, NTC

When a failure of the on-board radio equipment is detected the driver shall inform the signaller about the situation.

6.50.1. During the preparation of the traction unit

Level 2

The driver shall request a change of traction unit.

If the traction unit must be moved, the driver shall inform the signaller, apply RU rules and any instructions given by the signaller.

If the traction unit need not be moved, the driver shall switch off the ETCS on-board.

6.50.2. While running

Levels 1 with infill function by radio, 2

The driver and signaller shall apply rule 15 of Appendix B2.

6.51. MANAGING A FAILED DMI

The DMI fails. Levels 0, 1, 2, NTC

When the DMI fails the driver and signaller shall apply rule 15 of Appendix B2, unless another DMI is available on the desk.

6.52. MANAGING A SYSTEM FAILURE

Levels 0, 1, 2, NTC

When the following symbol is displayed:

the driver shall attempt to troubleshoot the problem using the applicable technical information.

If this attempt fails or is not possible, the driver and signaller shall apply rule 15 of Appendix B2.

6.53. MANAGING A NTC FAILURE

Levels 0, 1, 2, NTC

When the following text message is displayed:

‘[name of NTC] failed’

the driver shall acknowledge and apply non-harmonised rules.

6.54. MANAGING A VBC

Levels 0, 1, 2, NTC

The driver and signaller shall apply non-harmonised rules.

6.55. RUNNING IN AD

The driver switches the ATO on-board on. Levels 1, 2

6.55.1. Engaging ATO

When the following symbol is displayed, the driver may engage automated train operation by selecting it:

When ATO is engaged the following symbol is displayed:

Running in ATO

When the following symbol is displayed:

the driver:

(i) shall activate ‘skip stopping point’ when required by the timetable or if instructed to do so

(ii) after coming to a standstill at an operational stopping point, may manually move the train to correct its position, in the forward direction (when  is displayed) after notifying any passengers or in the reverse direction (when  is displayed, if authorised by the signaller and after notifying any passengers accordingly, until  is displayed.

(iii) shall operate door opening/closing if invited to do so by the respective DMI indications.

6.55.2. Disengaging ATO

The driver can disengage ATO by either :

(i) selecting the button associated with this icon 

(ii) applying the brake

(iii) switching off the ATO

(iv) selecting Override

Once the ATO disengages, the driver shall observe the icon displaying the current ETCS mode and shall follow the rule applicable for the mode entered.

6.56. MANAGING A TIMS FAILURE

Level 2when train integrity has to be confirmed

When the train preparer / driver of a train scheduled to run or running in an ETCS level 2 area where train integrity has to be confirmed becomes aware that the TIMS has failed, he/she shall apply rule 15 of Appendix B2.

6.57. MANAGING AN IMPAIRED ODOMETER

Levels 1, 2

When the following text message is displayed:

‘odometer impaired’

the driver shall apply rule 15 of Appendix B2.

7. GSM/R VOICE RADIO OPERATIONAL RULES

7.1. SELECTING THE GSM-R MODE

The driver needs to change the GSM-R mode.

When the displayed GSM-R mode does not correspond with the task to be performed (train or shunting movement), the driver shall select the correct mode.

7.2. ENTERING THE FUNCTIONAL NUMBER

The train preparer / driver is performing the registration.

The train preparer / driver shall enter the functional number:

(i) as early as possible before the initial departure,

(ii) every time the functional number changes.

7.3. SELECTING THE GSM-R NETWORK AT A BORDER CROSSING

The train is approaching a border crossing.

7.3.1. Inhibition of automatic network selection

When approaching a section in the vicinity of network borders, the driver shall inhibit the (on-board) automatic network selection function in the cab radio, if activated, when instructed to do so by the Route Book.

7.3.2. Selection of another GSM-R network

When according to the Route Book or a GSM-R network marker

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** For the exact dimensions and layout of the marker board, EN 16494:2015 needs to be used*

the driver is instructed to select another GSM-R network, he/she shall select the indicated GSM-R network on the cab radio unless the network is selected following an ETCS trackside command. If the driver is engaged in an emergency call, he/she shall not proceed with the manual selection as long as the call is active.

7.4. PERFORMING A DE-REGISTRATION

The train has to be manually de-registered.

At the end of the train run or when requested by the signaller, the driver shall carry out the de-registration .

7.5. INTENTIONALLY BLANK

7.6. MANAGING A FAILURE OF SELF TEST

When a text message indicating the failure of the GSM-R Cab Radio self-test is displayed (e.g. 'Self-test failed'), the driver shall inform the signaller about the situation.

The driver and signaller shall apply rule 8 of Appendix B2.

7.7. MANAGING A LACK OF GSM-R NETWORK AFTER THE TRAIN HAS ENTERED SERVICE

When a text message indicating the lack of GSM-R network is displayed (e.g. 'No network', 'GSM-R signal missing') ,the driver and signaller shall apply rule 8.2 of Appendix B2.

7.8. INTENTIONALLY BLANK

7.9. MANAGING A FAILURE OF DE-REGISTRATION

If the de-registration is not possible the driver shall inform the signaller about the situation, apply RU rules and follow any instructions given.

7.10. TAKING MEASURES IN CASE THE FUNCTIONAL NUMBER IS NOT AVAILABLE

When a text message indicating that the entered functional number is not available is displayed (e.g. 'Number not available'), the train preparer / driver shall check the number and try again to register using the correct number.

If the registration fails again, he/she shall inform the signaller about the situation, apply RU rules and follow any instructions given.

7.11. TAKING MEASURES IN CASE THE FUNCTIONAL NUMBER IS ALREADY USED

When a text message indicating that the entered functional number is already in use is displayed (e.g. 'Number already used' or 'Number already allocated'), the train preparer / driver shall check the number and try again to register using the correct number.

If the functional number used was correct, the train preparer / driver shall call that functional number and ask the other party to de-register the current number unless prevented from doing so by non-harmonised rules.

(i) If the call is successful and the other party de-registers the number in question, the train preparer / driver shall re-start the functional number registration procedure.

(ii) If there is no response to the call, the train preparer / driver shall initiate forced de-registration of the specific functional number.

In all other cases, the train preparer / driver shall inform the signaller on the issue and follow any instructions given.

7.12. MANAGING A FAILURE WHEN REGISTERING THE FUNCTIONAL NUMBER

When it is not possible to register the functional number, the train preparer / driver shall inform the signaller about the situation, apply RU rules and follow any instructions given.

7.13. GSM-PUBLIC AS PRIMARY COMMUNICATION (IF THIS OPTION IS AVAILABLE ON-BOARD)

7.13.1. Changing-over from GSM-R to GSM-Public

When instructed through a marker board indicating entry in a GSM network or through instructions on the route book, the driver shall select the indicated public GSM network, unless the network is automatically selected.

The driver and signaller shall apply non-harmonised rules.

7.13.2. Changing-over from GSM-Public to GSM-R

When instructed through a marker board indicating (re-)entry into a GSM-R network or through instructions on the route book, the driver shall select the indicated GSM-R network, unless the GSM-R network is automatically selected.

If the GSM-R network is not available, the driver shall apply rule 8.2 Appendix B2.

7.14. GSM-PUBLIC AS FALL-BACK COMMUNICATION (IF THIS OPTION IS AVAILABLE ON-BOARD)

7.14.1. Changing-over from GSM-R to GSM-Public

When the connection to the GSM-R network is lost, the driver shall select an alternate GSM public network if authorised to do so according to instructions previously given by the signaller or provided in the rule book and/or route book, unless the on-board GSM-R terminal is configured to carry out an automatic network selection.

The driver and signaller shall apply non-harmonised rules.

7.14.2. Changing-over from GSM-Public to GSM-R

When instructed by the signaller or through instructions in the rule and/or route book, the driver shall manually select the indicated GSM-R network on the cab radio, unless the on-board GSM-R terminal is configured to carry out an automatic network selection.

8. PART A - INTENTIONALLY BLANK

9. PART B – LIST OF ETCS OPERATIONAL TRAIN CATEGORIES

The ETCS operational train categories are listed in the table below:

label	type of train	type of brake	cant deficiency
PASS 1	**passenger train**	**P**	**80**
PASS 2			**130**
PASS 3			**150**
TILT 1	**tilting passenger train**		**165**
TILT 2			**180**
TILT 3			**210**
TILT 4			**225**
TILT 5			**245**
TILT 6			**275**
TILT 7			**300**
FP 1	**freight train**		**80**
FP 2			**100**
FP 3			**130**
FP 4			**150**
FG 1		**G**	**80**
FG 2			**100**
FG 3			**130**
FG 4			**150**

10. PART C – TABLE OF REFERENCES TO NON-HARMONISED RULES

This Part lists the non-harmonised rules of Appendix A.

The table further defines the entity (IM or RU) that is in charge of laying down any necessary further details for each of those rules in their respective safety management system.

Reference	Subject	In charge
5.1.1	Driver's observance of the line in cab-signalling	RU
6.2.4 6.39 6.41.2	Checking route conditions	IM
6.2.4 6.39 6.41.2	Checking necessary restrictions and / or instructions for running in SR	IM
6.2.4 6.39 6.41.2	Checking speed restrictions lower than the maximum speed for SR	IM
6.3.1	Manual entry into SH	RU
6.3.3	Running in SH	IM
6.3.6	SH refused by the RBC / SH request failed	IM
6.3.7	Passing a defined border of a shunting area	IM
6.7.1	Announcement of an ETCS level 0 transition	IM
6.7.3	Running in ETCS level 0	IM
6.11.1	Announcement of an ETCS level NTC transition	IM
6.11.3	Running in ETCS level NTC	IM
6.15	Acknowledgement of LS	IM
6.15	Running in LS	IM
6.16	Acknowledgement of UN	IM
6.16	Running in UN	IM
6.17	Acknowledgement of SN	IM

Reference	Subject	In charge
6.17	Running in SN	IM
6.28	Sounding the audible warning device	IM
6.33.1	Revoking an authorisation for ERTMS train movement	IM
6.34.3	Protecting and restarting shunting movements	IM
6.40.2	The train is rejected when preparing a movement	IM
6.41.4	Trip in SH	IM
6.45	Managing a balise read error	IM
6.48 a)	Managing a radio communication failure when SH is requested	IM
6.53	Managing a NTC failure	IM
6.54	Managing a VBC	IM
7.11	Taking measures in case the functional number is already used	IM
7.13.1	Changing-over from GSM-R to GSM-Public	IM
7.14.1	Changing-over from GSM-R to GSM-Public	IM

‘;

(46) Appendix B is amended as follows:

(a) the title is replaced by the following:

‘ *Appendix B*

Fundamental operational principles and common operational rules’;

(b) Point 11 is replaced as follows:

11. AUTHORISATION TO PASS AN END OF AUTHORITY

The driver of the train concerned shall have authorisation to pass an EOA.

When giving authorisation, the signaller shall give the driver any instructions concerning the movement. The driver shall apply the instructions and shall not exceed any speed restriction, where one is imposed, until reaching the location where the normal operation may be resumed.

(c) in point 13, the following fourth paragraph is added:

‘Anyone who receives an emergency call shall listen, not intervene in the communication that is in progress except to provide elements relevant to the context.’;

(d) point 14 is replaced by the following:

‘14. IMMEDIATE ACTIONS TO PREVENT DANGER TO TRAINS

Any railway undertaking/infrastructure manager staff who becomes aware of a danger to trains shall take immediate action to stop any trains which may be

affected, alert the signaller and take any other action as necessary to avoid harm or loss, and in particular:

(1) Any driver made aware of a danger to their train shall stop as soon as it is safe to do so and alert the signaller immediately to the danger using the emergency call.

(2) Any signaller made aware of a danger shall alert all drivers as appropriate through an emergency call or using any other available means.';

(e) point 15 is amended as follows;

(i) the third paragraph is replaced by the following:

'If the driver becomes aware of a failure of any on-board equipment that affects the running of the train, the driver shall:

– Inform the signaller of the situation, the location and the restrictions on the train should the train be allowed to continue its mission,

– Not commence or recommence the mission until permission to do so has been granted by the signaller.';

(ii) (b) the following fourth paragraph is inserted:

'If the signaller gives permission for the train to start or continue its mission then the driver shall proceed in accordance with the restrictions placed upon the train,';

(f) the following point 18 is added:

'18. ENTERING AN OCCUPIED TRACK SECTION WITHIN A STATION

– In case of an unplanned entry into an occupied track section, the signaller shall, before authorising the entry to the occupied track section, ensure that the involved drivers are informed of the circumstances.

– In all cases when a train has to enter an occupied track section, the signaller shall, before authorising the entry to the occupied track section, obtain confirmation that the occupying train or vehicles will not move towards the train entering the occupied track section.';

(47) Appendix C is amended as follows:

(a) In Section C1, a new point 2.4 is added:

'2.4 Glossary of Railway Terminology

When relevant, the railway undertaking shall produce a glossary of railway terminology for each network over which its trains operate. It shall supply the terms in regular use in the language chosen by the railway undertaking and in the 'operating' language of the infrastructure manager(s) whose infrastructure the railway undertaking operates on, based on the terminology used by the respective infrastructure manager.';

(b) in Section C1, point 3 is replaced by the following:

‘**3. Communication rules**

In order that safety-related communication is correctly understood, whatever the means of communication used, the following rules shall be used:’;

(c) Section C2 is amended as follows:

(i) point 1 is replaced by the following

‘**C2. European instructions**

1. Introduction

Railway undertakings and infrastructure managers shall use European Instructions in the communication procedure in the following cases:

(1) Authorisation to pass an End of Authority ;

(2) Authorisation to proceed after trip;

(3) Obligation to remain at standstill;

(4) Revocation of an instruction;

(5) Obligation to run with speed restriction;

(6) Obligation to run on sight;

(7) Authorisation to start after preparing a movement;

(8) Authorisation to pass defective level crossing(s);

(9) Obligation to run with power supply restriction;

(10-20) RESERVED

The numbers 1 to 20 are reserved for European instructions.

The use of the European instructions numbers 1-4 and 7 is mandatory for ETCS, in accordance with the rules of Appendix A.

Whenever the signaller needs to issue an operational instruction for which a European instruction exists, the signaller shall use this European instruction. If an operational instruction related to a class B system requires more information than the European instructions, a national instruction may be used instead. In such a case, the infrastructure manager may set out these requirements in its national instructions.

If numbered, the national instructions drawn up by the individual infrastructure managers shall start from 21 onwards.

The national instructions shall contain at least the same content as that for a European instruction. ’;

(ii) in point 2, ‘shunting movement’ is replaced by ‘shunting composition’ and the following fourth paragraph is added:

‘By way of derogation, a European Instruction 3 can also be revoked by a European Instruction 1, 2 or 7 without requiring a dedicated European Instruction 4.’;

(iii) in point 3, ‘shunting movement’ is replaced by ‘shunting composition’ and the first paragraph is replaced by the following:

‘An operational instruction includes information delivered digitally, verbally, physically on paper or as verbal instructions to be written down by the train driver or by other safe methods of communication with the same level of information.’;

(iv) points 6, 7 and 8 are replaced by the following:

‘**6. European instructions**

Each tick box, field of information and option for input in a field contained in a European instruction shall be given its own alphabetical or numerical identifier. Numbered identifiers that are part of more than one European instruction shall be given an identifier starting with ‘x’ instead of the number of the European instruction. This ‘x’ may only be replaced by the number of the European instruction when transmitting this instruction digitally.

While the content and the identifiers must be used and the alphabetical and numerical order of the identifiers must be respected, the format itself shall be indicative.

If a specific tick box, field or option for input in a field is not to be used in a Member State or on the network of an infrastructure manager, there is no obligation to display this tick box, field or option for input in a field in the European instruction.

No tick box, field or option for input in a field shall be added.

The scope of each individual field cannot extend beyond the scope of application of the European instruction to which it belongs.

The infrastructure manager and the railway undertaking may add guidance on how to fill in and read the forms of the European instructions, under the condition that this guidance is not part of the communication procedure.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

1 European Instruction 1 – Authorisation to pass EOA

1.10 Is allowed to pass EOA at ..... (1.11.1 Km | 1.11.2 Signal) and at ..... (1.12.1 Km | 1.12.2 Signal) and at ..... (1.13.1 Km | 1.13.2 Signal)
from ..... (1.14.1 Location | 1.14.2 Km | 1.14.3 Signal) to ..... (1.15.1 Location | 1.15.2 Km | 1.15.3 Signal)

1.20 Proceed in SH

x.25 Is exempted from running on sight

x.30 Set SR speed to ..... (x.31.1 Km/h | x.31.2 Mph)

x.35 Set SR distance to ..... (x.36 Meter)

x.41 Do not exceed the speed of ..... (x.42.1 Km/h | x.42.2 Mph) between | in ..... (x.43 Location) and ..... (x.44 Location)
on ..... (x.45.1 Track | x.45.2 Line) and ..... (x.46.1 Track | x.46.2 Line)
from ..... (x.47.1 Km | x.47.2 Signal) to ..... (x.48.1 Km | x.48.2 Signal)

x.90 Examine the line for the following reason ..... (x.91 [*free text*]) and report findings to ..... (x.92 [*free text*])

x.95 Additional instructions ..... (x.96 [*free text*])

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows: ..... (x.47.1 Km ~~| x.47.2 Signal~~)

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

European Instruction 2 – Authorisation to proceed after trip

2

2.10 If no MA is received, is allowed to proceed in SR

[*or*]

2.11 Is allowed to proceed in SH

x.25 Is exempted from running on sight

x.30 Set SR speed to ..... x.31.1 Km/h | x.31.2 Mph

x.35 Set SR distance to ..... x.36 Meter

x.41 Do not exceed the speed of ..... x.42.1 Km/h | x.42.2 Mph between | in ..... x.43 Location and ..... x.44 Location

on ..... x.45.1 Track | x.45.2 Line and ..... x.46.1 Track | x.46.2 Line

from ..... x.47.1 Km | x.47.2 Signal to ..... x.48.1 Km | x.48.2 Signal

x.90 Examine the line for the following reason ..... x.91 [*free text*] and report findings to ..... x.92 [*free text*]

x.95 Additional instructions ..... x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows: ..... x.47.1 Km ~~| x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

European Instruction 3 – Obligation to remain at standstill

3

3.10 Remain at standstill at the current location

3.15 Carry out End of Mission

3.20 Delete the available MA

x.95 Additional instructions

x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows:

x.47.1 Km ~~| x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

European Instruction 4 – Revocation of an instruction

4

4.10 Operational instruction ..... is revoked

4.11 Unique identification

x.95 Additional instructions .....

x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows: x.47.1 Km | ~~x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

European Instruction 5 – Obligation to run with speed restriction

5

x.41 Do not exceed the speed of ..... x.42.1 Km/h | x.42.2 Mph between | in ..... x.43 Location and ..... x.44 Location

on ..... x.45.1 Track | x.45.2 Line and ..... x.46.1 Track | x.46.2 Line

from ..... x.47.1 Km | x.47.2 Signal to ..... x.48.1 Km | x.48.2 Signal

Speed restriction indicated by lineside boards

5.67 Yes

[or]

5.68 No

x.90 Examine the line for the following reason ..... x.91 [*free text*] and report findings to ..... x.92 [*free text*]

x.95 Additional instructions ..... x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows: ..... x.47.1 Km ~~| x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

European Instruction 6 – Obligation to run on sight

6

6.40 Run on sight

[*and*]

x.41 Do not exceed the speed of

x.42.1 Km/h | x.42.2 Mph

between | in ..... and .....

x.43 Location x.44 Location

on ..... and .....

x.45.1 Track | x.45.2 Line x.46.1 Track | x.46.2 Line

from ..... to .....

x.47.1 Km | x.47.2 Signal x.48.1 Km | x.48.2 Signal

x.90 Examine the line for the following reason

x.91 [*free text*]

and report findings to

x.92 [*free text*]

x.95 Additional instructions

x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows:

x.47.1 Km ~~| x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

7 European Instruction 7 – Authorisation to start after preparing a movement

7.10 Is allowed to start in SR

[*or*]

7.11 Is allowed to start in SH

in the direction towards ..... 7.12.1 Location | 7.12.2 Signal

7.20 Is allowed to pass EOA at ..... 7.21 Signal and at ..... 7.22 Signal

[*and*]

7.23 Is prohibited to use override

x.25 Is exempted from running on sight

x.30 Set SR speed to ..... x.31.1 Km/h | x.31.2 Mph

x.35 Set SR distance to ..... x.36 Meter

x.41 Do not exceed the speed of ..... x.42.1 Km/h | x.42.2 Mph

between | in ..... x.43 Location and ..... x.44 Location

on ..... x.45.1 Track | x.45.2 Line and ..... x.46.1 Track | x.46.2 Line

from ..... x.47.1 Km | x.47.2 Signal to ..... x.48.1 Km | x.48.2 Signal

x.90 Examine the line for the following reason ..... x.91 [*free text*]

and report findings to ..... x.92 [*free text*]

x.95 Additional instructions ..... x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows: ..... x.47.1 Km | ~~x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

8 European Instruction 8 – Authorisation to pass defective level crossing(s)

8.40 Be advised of defective level crossing(s)

[*and / or*]

x.41 Do not exceed the speed of ..... x.42.1 Km/h | x.42.2 Mph

between | in ..... x.43 Location and ..... x.44 Location

on ..... x.45.1 Track | x.45.2 Line and ..... x.46.1 Track | x.46.2 Line

from ..... x.47.1 Km | x.47.2 Signal to ..... x.48.1 Km | x.48.2 Signal

8.50 Defective level crossing(s) (at) ..... 8.51.1 Km | 8.51.2 ID and ..... 8.52.1 Km | 8.52.2 ID and ..... 8.53.1 Km | 8.53.2 ID and ..... 8.54.1 Km | 8.54.2 ID

and ..... 8.55.1 Km | 8.55.2 ID and ..... 8.56.1 Km | 8.56.2 ID and ..... 8.57.1 Km | 8.57.2 ID and ..... 8.58.1 Km | 8.58.2 ID and ..... 8.59.1 Km | 8.59.2 ID

8.60 When approaching level crossing(s), do not exceed the speed of ..... 8.61.1 Km/h | 8.61.2 Mph

8.65 Stop before level crossing(s)

8.70 Examine level crossing(s)

8.75 Activate level crossing(s) manually

8.80 Activate audible warning device

8.85 Is allowed to pass level crossing(s)

x.95 Additional instructions ..... x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows: ..... x.47.1 Km | ~~x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

A Train No | Shunting composition No

B Date

C Location of train | Location of shunting composition

D Location of issuer

European Instruction 9 – Obligation to run with power supply restriction

9

9.40 Power supply restriction between | in ..... and .....
x.43 Location x.44 Location
on ..... and .....
x.45.1 Track | x.45.2 Line x.46.1 Track | x.46.2 Line
from ..... to .....
x.47.1 Km | x.47.2 Signal x.48.1 Km | x.48.2 Signal

Power supply restriction indicated by lineside boards

9.67 Yes

[*or*]

9.68 No

9.70 Run with lowered pantograph(s)

9.75 Run with 'main switch off'

9.80 Limit power consumption to .....
9.81.1 % | 9.81.2 Amp. | 9.81.3 kVA

x.90 Examine the line for the following reason ..... and report findings to .....
x.91 [*free text*] x.92 [*free text*]

x.95 Additional instructions .....
x.96 [*free text*]

V ID of driver

W ID of issuer

Y Time

Z Unique identification

User instructions:

Mark with a cross the tick boxes that become valid, as follows: X

In case of multiple options for the information, delete the non-valid options, as follows: x.47.1 Km ~~| x.47.2 Signal~~

In the valid fields, fill in the information on the dotted lines.

7. Communication of an operational instruction

The following terminology shall be used in the communication procedure by all the parties:

Situation	Terminology
Starting the delivery of an operational instruction	*'Prepare procedure ... [identification of the procedure]'*
Confirming that an operational instruction may be delivered	*'Ready for procedure ... [identification of the procedure]'*
Cancelling an operational instruction	*'Cancel procedure... [identification of the procedure]'*
If the message is subsequently to be resumed, the procedure shall be repeated from the start	*'Error during transmission'*
When a transmission error is discovered by the sender, the sender shall request cancellation	*'Error (+ prepare new procedure ... [identification of the procedure])'* *Or* *'Error (+ I say again)'*
Error during read back	*'Error (+ I say again)'*
Misunderstanding: if one of the parties does not fully understand a message, the message shall be repeated	*'Say again (+speak slowly)'*

8. Book of European and national instructions

The infrastructure manager is responsible for drawing up the Book of European and national instructions in its operating languages.

All the forms of the national instructions and the European instructions to be used shall be assembled in a document or a computer medium called the Book of European and national instructions.

This Book shall be used by both the driver and the staff authorising the movement of trains. The book used by the driver and the book used by the staff authorising the movement of trains shall be structured and numbered in the same way.

The Book shall comprise two parts.

The first part contains at least the following items:

– an index of the European instructions as used by the infrastructure managers;

– an index of the national operational instructions;

– a list of situations to which each operational instruction applies;

– the way of delivering each operational instruction, including whether it is allowed to be written down by the driver while running;

– the table containing the international phonetic alphabet.

The second part contains, in the operating languages of the infrastructure manager, the forms of:

– the European instructions;

– the national operational instructions.

These shall be collected by the railway undertaking and given to the driver. Railway undertakings operating in more than one infrastructure manager network shall provide to the driver:

- the generic forms of the European instructions as defined in point 6 of Appendix C2, or

- reduced forms of the European instructions that include at least the fields used by the infrastructure manager(s) on the network(s) of which the railway undertaking will operate.'

(v) point 9 is deleted;

(48) Appendix D is amended as follows:

(a) Note n.3 is replaced by the following:

'3. With a view to avoid duplication of testing, in relation to parameters 'Traffic loads and load carrying capacity of infrastructure' and 'Train detection systems', the infrastructure managers shall provide through RINF parameters 1.1.1.5.1 or 1.1.1.5.2 the list of vehicle types or vehicles compatible with the route for which they have already verified route compatibility, where such information is available.';

(b) in Section D1, the table is amended as follows:

(i) the first line 'Traffic loads and load carrying capacity of infrastructure' is replaced by the following: '

Traffic loads and load carrying capacity of infrastructure	Static axle loads and design and operational masses in the following load cases: - design mass as defined in Regulation (EU) 1302/2014 o in working order; o under normal payload; o under exceptional payload; - Where relevant operational mass in accordance with EN 15663: 2017- A1 2018: o in working order; o under normal payload. Maximum design speed; Vehicle length; The position of the axles along the unit (axle spacing). EN line category;	1.1.1.1.2.4 Load capability 1.1.1.1.2.4.1 National classification for load capability 1.1.1.1.2.4.2 Compliance of structures with the High Speed Load Model (HSLM) 1.1.1.1.2.4.3 Railway location of structures requiring specific checks 1.1.1.1.2.4.4 Document(s) with the procedure(s) for static and dynamic route compatibility checks	x	x	The static compatibility checks for vehicles shall be performed according to Point 7 of EN 15528:2021 and additional procedure(s) or relevant information if provided by the infrastructure manager through RINF under parameter 1.1.1.1.2.4.4. For the United Kingdom in relation to Northern Ireland networks, the static compatibility checks for vehicles shall be performed according to relevant national rules in accordance with 4.2.7.4 (4) of Commission Regulation (EU) No 1299/2014. Any requirement set out by the infrastructure manager which relates to the passenger payload, to be considered during route compatibility checks for vehicles capable of carrying a payload of passengers, shall be included in the procedure(s) or relevant information provided by the infrastructure manager through RINF under parameter 1.1.1.1.2.4.4. Such procedure may take into account technical or operational measures which have an impact on the passenger payload on standing areas.

	For vehicles capable of carrying a payload of passengers: EN line category for the standard value of payload in standing areas and – in case of application – for any particular value of payload in standing areas, according to Point 6.4 of EN 15528:2021. Static compatibility check for wagons: Permissible payload for different line categories according to WAG TSI.				The dynamic compatibility checks for trains, when necessary in accordance with the information provided by the infrastructure manager, shall be performed according to the procedure(s) or relevant information provided by the infrastructure manager through RINF under parameter 1.1.1.1.2.4.4.

’;

(ii) the following new line is inserted after the line ‘Gauging’: ‘

Specific check for Combined Transport	Wagon Compatibility Code, Wagon Correction Digit and ILU Technical Number (WCC + ILU Technical Number) combined with the freight Wagon Correction Digit = CT code	1.1.1.1.3.4 Standard combined transport profile number for swap bodies 1.1.1.1.3.9 Standard combined transport profile number for roller units 1.1.1.1.3.8 Standard combined transport profile number for container 1.1.1.1.3.5 Standard combined transport profile number for semi-trailers (CT Line code)		X	Comparison in accordance with the specification defined in point 3.1 of the ERA Technical Document on codificaiton of combined transport (ERA/TD/2023-01/CCT) version 1.0 of 06/03/2023.

’;

(iii) the line ‘Train detection system’ is replaced by the following: ‘

Train detection systems	Information if the vehicle has electrical or electronic equipment on board creating interference current in the rail or if the vehicle has electrical or electronic equipment on board creating interference electromagnetic fields close to the axel counter Type of train detection systems for which the vehicle has been designed and assessed by tests performed in accordance with ERA/ERTMS/033281	1.1.1.3.7.1.1 Type of train detection system 1.1.1.3.7.1.2 Type of track circuits or axle counters to which specific checks are needed. 1.1.1.3.7.1.3 Document with the procedure(s) related to the type of train detection systems declared in 1.1.1.3.7.1.2 Specific to the French network: 1.1.1.3.7.1.4 Section with train detection limitation	X		Verification only needed if: • If 1.1.1.3.7.1.1 is “track circuit” then only for vehicles having electrical or electronic equipment on board creating interference current in the rail • If 1.1.1.3.7.1.1 is “axel counter” then only for vehicles having electrical or electronic equipment on board creating interference electromagnetic fields close to the axel counter • If 1.1.1.3.7.1.1 is “loop” then not needed. Comparison of the declared type of train detection system(s) between vehicle and the intended route. **Note.** At vehicle authorisation, based on TSIs and the documents specifying specific cases, that are referenced in RINF and based on ERA/ERTMS/033281, the technical compatibility is verified between the vehicle and all train detection system(s) of the network(s) in the area of use. In duly justified cases (e.g. problems of non-detection of the vehicle occurring during operation), tests and/or checks could be done after vehicle authorisation, involving the railway undertaking and infrastructure manager.

Train detection system	Possibility of preventing the use of the lubrication device	1.1.1.1.7.1 Use of flange lubrication	X		Verification if the use of flange lubrication is allowed in the intended route Note: The output of the check should be taken into account by the Safety Management System of the Railway Undertaking (e.g. preventing the use of flange lubrication in the section of line)
New Train detection systems : influencing unit	From technical file of each vehicle of the train For each band of the frequency management defined in the specification referenced in Appendix J.2 index [A] of LOC&PAS TSI and in the specific cases or technical documents referred to in Article 13 of CCS TSI when they are available: - Maximum interference current (A) and applicable summation rule, - Maximum magnetic field (dBµA/m) both radiated field and field due to the return current and applicable summation rule, - Minimum Input Impedance (Ohm). Comparable parameters specified in the specific cases or in the technical documents referred to in Article 13 of TSI CCS when they are available.	1.1.1.3.4.2 Frequency bands for detection 1.1.1.3.4.2.1 Maximum interference current 1.1.1.3.4.2.2 Minimum Input impedance 1.1.1.3.4.2.3 Maximum magnetic field		X	Route compatibility check applicable to: - passenger trains consisting of locomotive(s) and coaches - freight trains where one or several freight wagons have electrical or electronic equipment on board creating interference current in the rail or interference electromagnetic fields close to the axel counter Compliance of the resulting emissions at 'Influencing Unit' level (as defined in clause 3.2 Appendix A index 77 of CCS TSI) with maximum interference values (current level and magentic field limit) and minimum impedance allowed, shall be checked. For each frequency band, the procedure to define the resulting emissions at 'Influencing Unit' level shall be calculated based on summation rules specified in : - Clauses 3.2.1 and 3.2.2 of Appendix A index 77 of CCS TSI compliant train detection system; - Specific cases referring to technical documents as specified in Art. 13 of the CCS TSI for non TSI compliant train detection system. Pending the notification of specific cases referred to in article 13 of CCS TSI, the notified national rules apply. -

';

(iv) the line ‘Voltages and frequencies’ is replaced by the following: ‘

Voltages and frequencies	Energy supply system : - Nominal voltage and frequency; - Type of contact line system -	1.1.1.2.2.1.1 Type of contact line system 1.1.1.2.2.1.2 Energy supply system (Voltage and frequency) 1.1.1.2.2.1.3 Highest non-permanent voltage (Umax2) for France on lines not compliant with values in table 1 of EN 50163:2004	X		Comparison of the declared voltage between vehicle and the intended route of the traction supply system (nominal voltage and frequency) and type of contact line system. Note: For France, comparison of Highest non-permanent voltage (Umax2) between the vehicle and intended routes having Umax2 not compliant with values in table 1 of EN50163:2004

’;

(v) the line ‘ETCS – Train Integrity’ is replaced by the following:‘

ETCS	Managing information about the completeness of the train (not from driver)	1.1.1.3.2.8 Train integrity confirmation from on-board (not from driver) necessary for line access	X	X	Verification that vehicle/train is able to confirm (not from driver) the train integrity if required by trackside.

’;

(vi) the following two new lines are inserted after the line ‘ETCS- Train Integrity’: ‘

ETCS	Envelope of legally operated ETCS system versions	1.1.1.3.2.10 ETCS M_version	X		Verification that the ETCS M_VERSION value in RINF is in the range of the legally operated ETCS system vesions supported by the vehicle.
ETCS	Safe consist length information from on-board necessary for access to the line and SIL level	1.1.1.3.2.11 Safe consist length information from on-board necessary for access to the line and SIL	X	X	Verification that vehicle/train is able to provide the safe consist length information with the minimum required level indicated in RINF.

’;

(vii) the line ‘GSM-R -SIM Card GSM-R Home Network’ is replaced by the following:‘

GSM-R	GSM-R Voice SIM Card Home Network	1.1.1.3.3.5 GSM-R networks covered by a roaming agreement	X		Verification that the GSM-R SIM Card Home Network is in the list of GSM-R networks with roaming agreement for all Points in the route. This has to be performed for all SIM Cards in the vehicle.

’;

(viii) the following new line is inserted after the line ‘GSM-R -SIM Card GSM-R Home Network’:‘

GSM-R	GSM-R Data SIM Card Home Network	1.1.1.3.3.5 GSM-R networks covered by a roaming agreement	X		Verification that the GSM-R SIM Card Home Network is in the list of GSM-R networks with roaming agreement for all Points in the route. This has to be performed for all SIM cards in the vehicle.

’;

(ix) the line ‘GSM-R - SIM card support of group ID 555’ is replaced by the following: ‘

GSM-R	GSM-R Voice SIM card support of group ID 555	1.1.1.3.3.4 GSM-R Use of Group 555	X		Verification that the Group ID 555 is used trackside. If this is not configured on-board, alternative operational procedures should be prior established with the infrastructure manager.

’;

(c) Section D2 is replaced as follows:

‘Appendix D2 Elements the infrastructure manager has to provide to the railway undertaking for the Route Book

Number	*Route Book information*	*Route book information in Register of Infrastructure (RINF)*	*Explanations*
1	**Generic information regarding the infrastructure manager**		
1.1	infrastructure manager's code – IM’s Code	1.1.0.0.0.1 – section of line 1.1.1.1.8.1 – section of line track tunnel 1.2.1.0.0.1 – operational point track 1.2.1.0.5.1 – operational point track tunnel 1.2.1.0.6.1 – platform 1.2.2.0.0.1 – siding	
2	**Maps and Diagrams**		
2.1	**Map: schematic overview including**		
2.1.1	Sections of line	1.1.1.0.1.1	The RINF elements are geo-located. A map of one section of line is provided by its geo location superposed on a mapping service Mapping a list of sections of line will result from a route calculation
2.1.2	(Principal) operational points	1.2.0.0.0.5	The RINF elements are geo-located. A map of one operational point is provided by its geo location superposed on a mapping service
2.2	**Route diagram**		**A route is defined by a list of consecutive tracks of sections of line with their corresponding operational points, linking one operational point A from operational point B**

Number	*Route Book information*	*Route book information in Register of Infrastructure (RINF)*	*Explanations*
2.2.1.1	Indication of running lines	1.1.0.0.0.2 1.1.1.0.0.1 1.1.1.0.0.2	National line identification is a property of each section of line The running track is given by the identification of the track and the running direction (N/O/B)
2.2.1.2	Indication of loops	1.2.0.0.0.4	
2.2.1.3	Indication of catch/trap points	1.2.0.0.0.4	
2.2.1.4	Indication of sidings	1.2.2.0.0.2	Sidings are defined as part of operational points (geo-localized)
2.2.2	2.2.2 Principal locations (stations, yards, junctions, freight terminals) and their position relative to the line	1.2.0.0.0.1 1.2.0.0.0.2 1.2.0.0.0.3 1.2.0.0.0.4 1.2.0.0.0.5 1.2.0.0.0.6	
2.2.3	Location, type and name of all fixed signals relevant for trains	1.1.1.3.14 – signal on the track 1.2.1.0.8 – signal in operational point	New type of network element: "Signal" to be referred in regards to track of section of line or operational point
2.3	**Station/Yard/Depot diagrams**		Station, yard, depot are defined in RINF as operational point types
2.3.1	Unique Operational Point ID (UOPID)	1.2.0.0.0.1 1.2.0.0.0.2 1.2.0.0.0.3	
2.3.2	Type of location passenger terminal, freight terminal, yard, depot	1.2.0.0.0.4	
2.3.3	Location, type and identification of fixed signals that protect danger points	1.2.1.0.8.1 1.2.1.0.8.2 1.2.1.0.8.3 1.2.1.0.8.4	New type of network element: "Signal" to be referred in regards to operational point
2.3.4	Identification and plan of tracks, including switches	1.2.1.0.0.2 1.2.0.0.0.7.1 1.2.0.0.0.7.2	Schematic overview parameters added
2.3.5	Identification of platforms	1.2.1.0.6.2	
2.3.6	Length of platforms	1.2.1.0.6.4	
2.3.7	Height of platforms	1.2.1.0.6.5	
2.3.8	Curvature of platforms	1.2.1.0.6.8	
2.3.9	Identification of loops	1.2.0.0.0.1 1.2.0.0.0.2 1.2.0.0.0.3 1.2.0.0.0.4	

Number	*Route Book information*	*Route book information in Register of Infrastructure (RINF)*	*Explanations*
2.3.10	Fixed installations for servicing trains(toilet discharge, cleaning facilities, wather restocking, refuelling, sand restocking, electric shore supply)	1.2.2.0.4.1 1.2.2.0.4.2 1.2.2.0.4.3 1.2.2.0.4.4 1.2.2.0.4.5 1.2.2.0.4.6	
3	**Specific section of line information**		
3.1	**General Characteristics**		
3.1.1	Section of line extremity 1	1.1.0.0.0.3	
3.1.2	Section of line extremity 2	1.1.0.0.0.4	
3.1.3	Lineside indications of distance (frequency, appearance and positioning)	1.1.1.0.0.3	
3.1.4	Maximum permissible speed for each track	1.1.1.1.2.5	
3.1.5	Intentionally blank		
3.1.6	Intentionally blank		
3.1.7	Means of Communication with the traffic management/control centre in normal, degraded and emergency situation	1.1.1.3.3.1 – GSM-R version 1.1.1.3.6.1 - Other radio systems installed (Radio Legacy Systems) 1.1.1.3.3.3 – Optional GSM-R functions	
3.2	**Specific Technical Characteristics**		
3.2.1	Gradient profile	1.1.1.1.3.6	
3.2.2	Gradient location	1.1.1.1.3.6	
3.2.3	Tunnels: location, name, length, specific information such as the existence of walkways and evacuation and rescue points as well as the location of safe areas where evacuation of passengers may take place; fire safety categorisation	1.1.1.1.8.2 1.1.1.1.8.3 1.1.1.1.8.4 1.1.1.1.8.7 1.1.1.1.8.10 1.1.1.1.8.11 1.1.1.1.8.12 1.1.1.1.8.12.1 1.1.1.1.8.13 1.1.1.1.8.13.1	

Number	*Route Book information*	*Route book information in Register of Infrastructure (RINF)*	*Explanations*
3.2.4	Non-stopping areas: identification, location, type	1.1.1.3.14.1 1.1.1.3.14.2 1.1.1.3.14.3 1.1.1.3.14.5	Specific type of signal “non-stopping area” plus the length of the non-stopping area
3.2.5	Industrial risks – locations where it is dangerous for the driver to step out	1.1.0.0.1.1	
3.2.6	Intentionally blank		
3.2.7	Type of signalling system and corresponding operational regime (double track, reversible working, left or right hand running, etc.)	1.1.1.3.2.1 – ETCS level 1.1.1.3.2.2 – ETCS baseline 1.1.1.3.5.3 - Train protection legacy system 1.1.1.0.0.2 - Normal running direction 1.1.0.0.1.3 - Operational regime	Signalling systems already in RINF in accordance with EU 2019/777 Reversible working regime already defined in RINF at track level. New parameter for double track and left -right hand running regime defined at section of line level
3.2.8	Intentionally blank		
3.3	**Energy subsystem**		
3.3.1	Energy supply system (voltage and frequency)	1.1.1.2.2.1.2	
3.3.2	Maximum train current	1.1.1.2.2.2	
3.3.3	Restriction related to power consumption of specific electric traction unit(s)	1.1.1.2.5.1 1.1.1.2.5.4	Yes/No already in RINF in accordance with EU 2019/777 New parameter under “Rules and restrictions” group of parameters for a document describing the restriction
3.3.4	Restriction related to the position of Multiple Traction unit(s) to comply with contact line separation (position of pantograph)	1.1.1.2.5.5	New parameter under “Rules and restrictions” group of parameters
3.3.5	Location of neutral sections	1.1.1.2.4.1.2	
3.3.6	Location of areas that shall be passed with lowered pantographs.	1.1.1.2.4.1.2	
3.3.7	Conditions applying with regard to regenerative braking	1.1.1.2.2.4.1	
3.3.8	Maximum current at standstill per pantograph	1.1.1.2.2.3	

Number	*Route Book information*	*Route book information in Register of Infrastructure (RINF)*	*Explanations*
3.4	**Control-Command and Signalling subsystem**		
3.4.1	Need for more than one system active simultaneously	1.1.1.3.10.1 1.1.1.3.10.2 1.2.1.1.9.1 1.2.1.1.9.2	
3.4.2	Special conditions to switch over between different class B train protection, control and warning systems	1.1.1.3.8.1.1 1.2.1.1.7.1.1	
3.4.3	Special technical conditions required to switch over between ERTMS/ETCS and Class B systems, boundary locations between ERTMS/ETCS and Class B systems	1.1.1.3.8.3 1.2.1.1.7.3	The boundry location can be deduced from the track associated with ETCS and the adjacent track associated with Class B system
3.4.4	Radio network ID(s) used in the route and special instructions (location) to switch over between different radio systems	1.1.1.3.3.1 – GSM-R version 1.2.1.1.2.1 1.1.1.3.6.1 - Other radio systems installed (Radio Legacy Systems) 1.2.1.1.5.1 1.1.1.3.8.2 1.1.1.3.8.2.1 1.2.1.1.7.2 1.2.1.1.7.2.1	the location to switch over can be deduced from the track associated with one radio system and the adjacent track associated with another radio system
3.4.5	Permissibility to use Eddy-current brake	1.1.1.1.6.2 1.2.1.0.4.2	
3.4.6	Permissibility to use magnetic brake	1.1.1.1.6.3 1.2.1.0.4.3	
3.4.7	ID(s), phone number(s) and area(s) of authority (boundary locations) of ERTMS/ETCS Radio Block Centers covering the route	1.1.1.3.2.17 1.2.1.1.1.17	The area covered by RBC is defined by all the section of line tracks associated to the same ID or phone number
3.4.8	ATO Grade of Automation and system version installed lineside	1.1.1.3.13.1 1.1.1.3.13.2 1.2.1.1.10.1 1.2.1.1.10.2	New RINF parameters associated to section of line track
3.4.9	ATO communication system supported from trackside	1.1.1.3.13.3 1.2.1.1.10.3	

Number	*Route Book information*	*Route book information in Register of Infrastructure (RINF)*	*Explanations*
3.4.10	Big Metal Mass	1.1.1.3.2.18 1.2.1.1.1.18	
3.4.11	Train integrity conformed by on-board	1.1.1.3.2.8 1.2.1.1.1.8	
3.5	**Operation and Traffic Management subsystem**		
3.5.1	Operating language	1.1.0.0.1.2 1.2.0.0.0.8	

(d) the following Section D3 is added:

'D3 **ERTMS trackside engineering information relevant to operation that the infrastructure manager shall provide to the railway undertaking**

Notes:

1. The information provided herein is complementary to the route compatibility check, which is assumed to have already been performed for a train intended to operate on a route. It has to be provided by the infrastructure managers through RINF. Those parameters can be published in RINF Application by using the concept of "subset of common caracteristics" as defined in ERA vocabulary and RINF Regulation.

2. Most of the information listed below is not otherwise visible to the driver or can only be indirectly perceived under certain operational conditions, usually by observing the system behaviour in certain situations.

3. Item 1.5 lists the minimum set of ETCS National Values required to be made available to the railway undertakings. Infrastructure managers shall also provide upon request to a railway undertaking the complete set of National Values.

4. The ERTMS terms mentioned in the table are defined in the glossary and system requirements specification of the Control-command and Signalling TSI (under indexes 3 and 4 respectively of Appendix A).

5. The information provided in this Appendix will enhance drivers' knowledge of the operational conditions they need to consider when running under ERTMS in the infrastructure manager's network. It can be used in drivers' training and may be integrated under internal railway undertaking rules and procedures.

Number	*Information*	*Explanation*
1	**ETCS specificities**	
1.1	Whether the ETCS trackside is engineered to transmit Track Conditions and if yes, which ones	If the trackside does not provide Track Conditions, the driver will need to be informed about such conditions via alternative methods

Number	*Information*	*Explanation*
1.2	Whether the ETCS trackside implements the Level Crossing (LX) procedure or an equivalent solution	If the trackside does not implement any solution to cover defective LXs (which are normally protected by means of a technical system), then drivers will be required to comply with instructions received from other sources
1.3	The cant deficiency used to determine the basic Static Speed Profile of the line and other cant deficiency train categories for which the ETCS trackside is configured to provide Static Speed Profiles	Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides Static Speed Profiles
1.4	Reasons for which an ETCS Radio Block Center can reject a train	List of cases subject to system design choices made by the infrastructure manager
1.5	ETCS National Values	Minimum set of parameters to be communicated to the railway undertakings
1.5.1	D_NVROLL	Parameter used by the ETCS on-board to supervise the distance allowed to be travelled under the roll-away protection and the reverse movement protection
1.5.2	Q_NVEMRRLS	Qualifier defining whether the application of the emergency brake for reasons other than a trip can be revoked as soon as the conditions for it have disappeared or after the train has come to a complete standstill
1.5.3	V_NVALLOWOVTRP	Maximum speed allowed when selecting ‘Override EOA’
1.5.4	V_NVSUPOVTRP	Permitted speed limit supervised when ‘Override EOA’ is active
1.5.5	D_NVOVTRP	Maximum distance for overriding the train trip
1.5.6	T_NVOVTRP	Maximum time for overriding the train trip
1.5.7	D_NVPOTRP	Maximum distance allowed for reversing in Post Trip Mode
1.5.8	T_NVCONTACT	Maximum time without a safe message from Radio Block Center before train reacts
1.5.9	M_NVCONTACT	On-Board system reaction when T_NVCONTACT expires

Number	*Information*	*Explanation*
1.5.10	M_NVDERUN	Qualifier determining whether ETCS on-board allows a driver ID to be changed while running or only at standstill
1.5.11	Q_NVDRIVER_ADHES	Qualifier determining whether the driver is allowed to modify the adhesion factor used by the ETCS on-board to calculate the braking curves
1.5.12	Q_NVSBTSMPERM	Permission to use service brake in target speed monitoring
1.5.13	National Values used for the brake model	Set of parameters for tweaking the braking curves calculated by the ETCS on-board system to match accuracy, performance and safety margins imposed by the infrastructure manager
2	**GSM-R specificities**	
2.1	Whether the GSM-R network is configured to allow forced de-registration of a functional number by another driver	This feature will condition the applicable operational rules for drivers and signallers when dealing with cab radios registered under wrong numbers
2.2	Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch	These constraints, where applicable, are meant to manage the limited number of circuit-switched radio connections that can be handled simultaneously by a Radio Block Center

’;

(49) Appendix F title is replaced as follows throughout the text:

‘Elements relevant to professional qualification for the tasks associated with “accompanying trains’;

(50) Appendix G title is replaced as follows throughout the text:

‘Elements relevant to professional qualification for the task of preparing trains’;

(51) Letter (a) of Point 1 of Appendix G is amended as follows:

‘(a) This Appendix, which shall be read in conjunction with point 4.6 and 4.7, gives a list of the elements that are deemed to be relevant to the task of preparing a train on the network.;

(52) Letter (a) of Point 3 of Appendix G is amended as follows:

‘(a) Application of train preparation rules, train composition rules, train braking rules, train loading rules etc. to ensure the train is in running order’;

(53) Appendix I is replaced as follows:

'Appendix I

List of areas for which national rules may continue to apply according to Article 8 of Directive (EU) 2016/798

1. AREAS FOR NATIONAL RULES

(a) Shunting

- Excluded are operating rules for Digital Automatic Coupling (DAC)
- National rules for ERTMS shunting are limited to the areas defined in Part C of Appendix A

(b) Signalling rules

- Rules related to the operational use of the national signalling system

(c) Maximum speeds in degraded mode including running on sight

(d) Running at caution

(e) Local operational rule

- Rules of a strictly local nature relating to specific local conditions, when not mentioned in RINF in accordance with Article 14(11) of Directive (EU) 2016/797

(f) Operation during works

(g) Safe operation of test trains

(h) Train visibility

- Front end (see point 4.2.2.1.2)
- Existing Non TSI conform vehicles

(i) Managing an emergency situation and emergency responses (see point 4.2.3.7)

- Role of local/national authorities and emergency services, and their contact details.
- Methods and procedures in emergency situation not covered by the requirement of this Regulation, including notification of accidents and incidents: national instructions on modalities for notifications to authorities.

(j) Safety-related communications methodology

- National operational instructions (see Appendix C2)

(k) Requirements on route knowledge under the national transposition of Directive 2007/59/EC';

2. LIST OF OPEN POINTS

(a) Exceptional transport

- Specific requirements to operate combined transport trains exceeding the loading gauge but not exceeding the codification of the line

(b) Train running information for drivers (see 4.2.1.2.3)

– Additional information';

(c) Recording of monitoring data outside the train (see 4.2.3.5.1)

– Additional information

(d) Recording of monitoring data on-board the train (see 4.2.3.5.2)

– Additional information

(e) Professional competences (see point 4.2.1.1 and 4.6)

– Elements relevant to professional qualification for the tasks associated with despatching trains and authorising train movements.

– Evidence of professional competences.

(f) Health and safety conditions (see point 4.7)

– Alcohol, drugs and psychotropic medication limits (see 4.7.1).

(g) Common operational principles and rules (See 4.4 and Appendix B)

– Sanding — automatic sanding equipment and report in case of use of the sanding equipment;

– Failure of level crossing — additional information;

(h) Safety-related communications methodology

– Additional terms (see Appendix C1)

(i) Operations in long tunnels (see 4.3.5)

– Additional information';

(54) Appendix J is amended as follows:

(a) the first table is amended as follows:

(i) the following line is inserted after the line 'Authorising train movements':

'

Combined transport train	A Combined Transport train is a freight train composed completely or partly of freight wagons loaded with intermodal loading unit(s) (e.g. swap bodies, semi-trailers, containers, roller units).

';

(ii) the line 'Emergency call' is replaced by the following: '

Emergency call	Call set up in some dangerous situations to warn all trains/shunting compositions in a defined area.

';

(iii) a new line is inserted after the line ‘Emergency call’:

‘

End Of Authority	Location up to which a train or a shuning composition is authorised to proceed.

’;

(iv) the line ‘Safety-critical task’ is replaced by the following:

‘

Safety-critical task	Task, affecting railway safety, performed by staff preparing, operating, controlling or otherwise involved in the movement of trains.

‘;

(v) a new line ‘Shunting composition’ is added after the line ‘Scheduled stop’: ‘

Shunting composition	A traction unit coupled or not to a set of vehicles and intended to be moved under shunting conditions without train data.

’;

(vi) the line ‘Signaller’ is replaced by the following:

‘

Signaller	Staff in charge of the route setting of trains / shunting compositions and of issuing instructions to drivers.

’;

(vii) the line ‘Train’ is replaced by the following:

‘

Train	A train is defined as (a) traction unit(s) with or without coupled vehicles with train data available operating between two or more defined points according to an allocated train path and identified by means of a unique train running number.

’;

(viii) the following line is inserted after the line ‘Train’:

‘

Train composition	Train composition is the sequence of vehicles in a train. This means both the formation of vehicles within a train and their specific vehicle characteristics.

’;

(ix) the line ‘Train preparation’ is replaced by the following:

‘

Train preparation	Process for ensuring that a train is in a fit condition to enter service, that the train equipment is correctly deployed and the train composition matches the train's designated route(s) It includes the coupling or decoupling of vehicles, connecting or disconnecting of pipes, services, cabling and the indication of a rear end signal. Train preparation also includes brake configuration setting and the inspections, tests, and checks before departure.. Note: The movement to get a vehicle in or out of the train composition is a shunting movement.

’;

(b) the second table is amended as follows:

(i) the following line is inserted after the line ‘COTIF’:

‘

CT	Combined Transport

’;

(ii) the following line is inserted after the line ‘ENE’:

‘

EOA	End Of Auhtority

’;

(iii) the following line is inserted after the line ‘GSM-R’:

‘

ILU	Intermodal Loading Unit

’;

(iv) the following line is inserted after the line ‘RU’:

‘

SIL	Safety Integrity Level

’.