

#CCRCC2019

ERTMS linked national rules

Hans Bierlein



EC presentation (extract) RISC 84 - 30/31 January 2019

Member States had to notify existing national rules before 16 December 2016

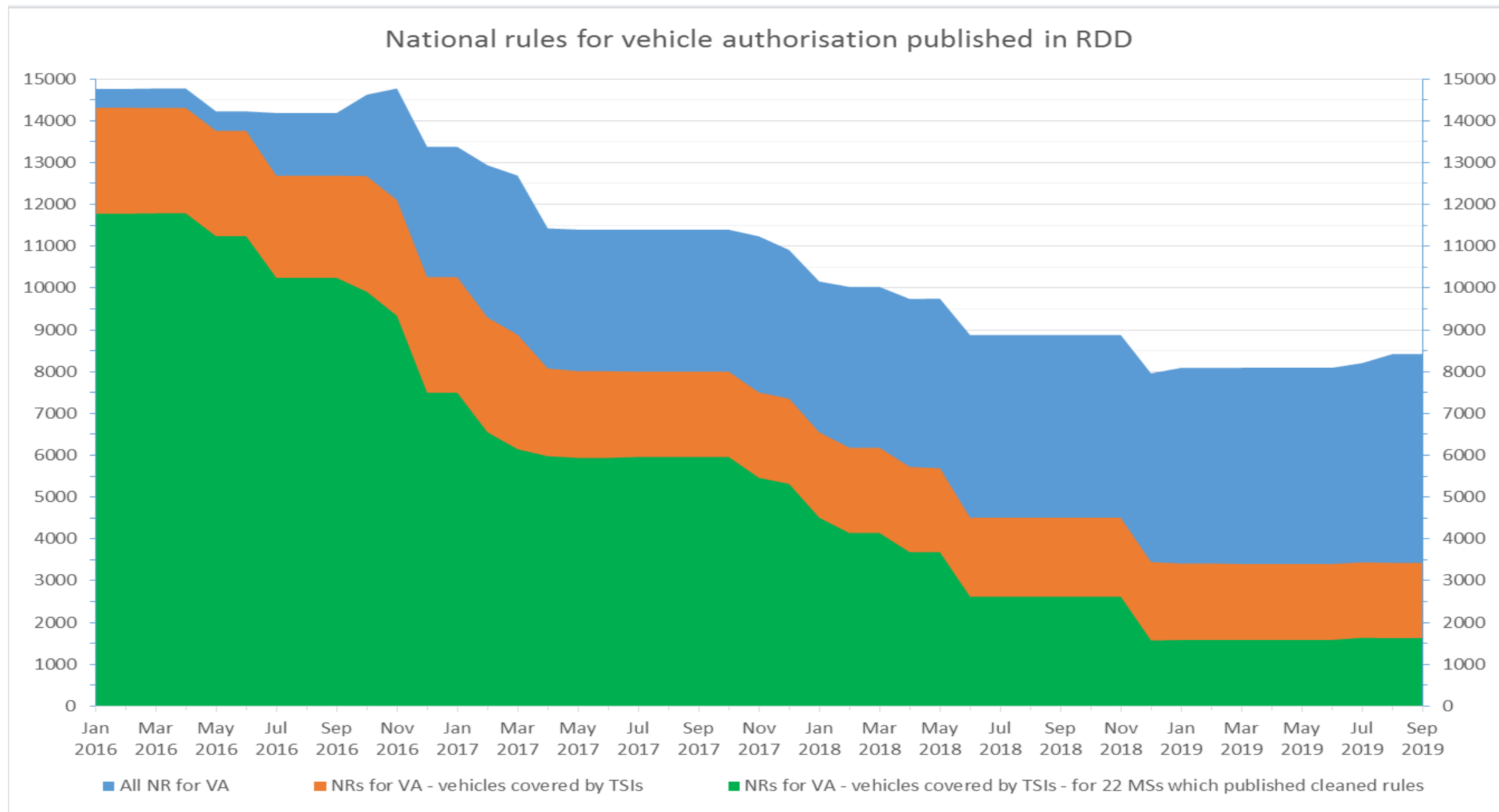
National rules not notified don't apply for the purpose of Directives 2016/797 -798

Until the Single Rules Database is available, existing systems are to be used

- **Reference Rule Database (RDD)** for rules applicable for **vehicle authorisation**
- **Notif-IT** for **fixed installations** related national rules and **safety rules**

National rules in RDD and Notif-it are deemed notified

Overview of the NRs at EU level



Majority of the Member States / States applied 2015/2299/EU and have cleaned up the RDD

There is still the need to check and discuss when a MS has cleaned up.

Discussions took and take place before the rules were notified, some MS are still working on their rules or the update of them.

All rules discussed are listed the ERA Excel document (maintained shared on the Agency website) , waiting MS update the RDD.

Not all MS have notified NTR related to the open points in the TSI (only RAM for B3).

To get the full picture, applicant has to check RDD, ERA Excel document, NSA/IM website.

ERA VA (vehicle authorisation) is key to make the “hidden” requirements transparent

Some figures from the ERA Excel table

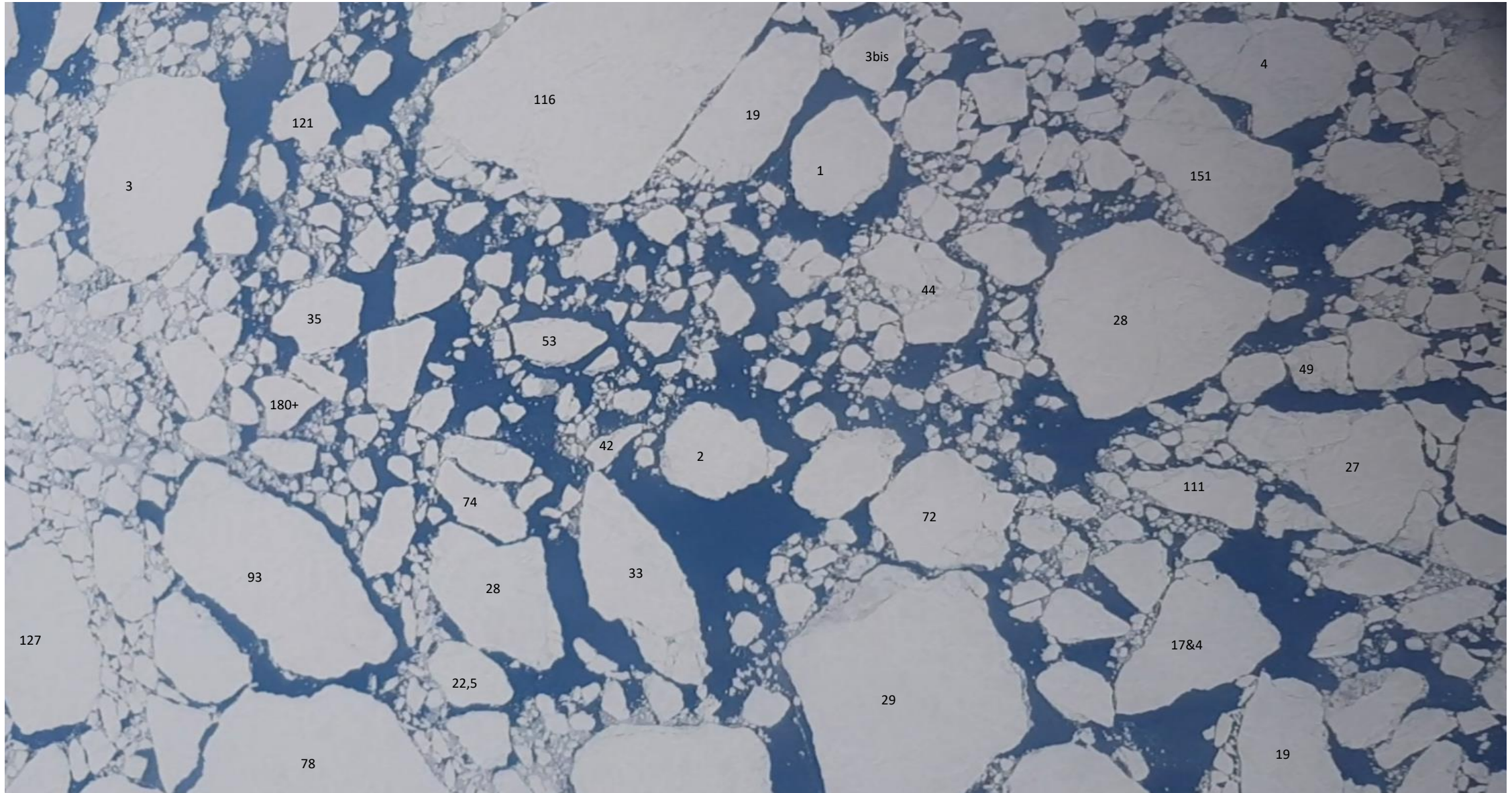
Playing with the filters

- 180 CCS NTR are listed
- 54 are identified to be related to class B (126 remain)
- 13 are related to testing (113 remain)
- 28 for GSM-R (85 remain)
- 45 are for B2 only (40)
- 5 are for B3 MR1 only (35)
 - **9 negatively assessed**

- 180 CCS NTR are listed
- 118 agreed
- 40 are under discussion
- **15 negatively assessed**

Numbers: X topics could be in one rule or it could be X rules

NTR – counting numbers



It's the real impact what counts



The 15 not agreed rules and its impact

- CMD (cold movement detector) required from 2021 on (moved to SMS)
- DSD (Driver safety device) alarm via GSM-R
- Text displayed in NL (Non Leading) mode when NL signal is lost
- National list of train categories (performance)
- Trackside monitoring via on-board ETCS
- Train running number entry (between ETCS and GSM-R voice) only once
- Radio stop
- Enhanced receiver mandatory for access
- Incorrect usage (trackside) of ETCS variables
- Additional information to be recorded in the JRU

For some of these NTR MSs have injected CRs in the ERA CCM (change control management)

- The CCS subsystem contains (IoD) all trackside CCS equipment (e.g. interlocking), whereas the TSI limit its scope to ETCS, GSM-R, Class B and train detection.
- Some MS intend to notify (Notif-it) their rules e.g. on interlocking's, others not.
- Agency/EC organised 19.09.2019 a workshop “Notification of national rules for fixed installations”, final conclusions are still pending.

RDD

<http://rdd.era.europa.eu/rdd/>

ERTMS NTR – Agency Excel document

https://www.era.europa.eu/sites/default/files/activities/docs/ertms_ntr_public_list_en.xls

Notif-IT

<https://webgate.ec.europa.eu/risdb/home.do>



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Backup

Information on the notification of national rules

RISC 84
30/31 January 2019

Railway Safety and Interoperability,
DG MOVE, European Commission



Objective

Eliminate obstacles to interoperability

- **Harmonisation in TSIs makes national rules redundant and unnecessary**
- **Limited cases where national rules may continue to apply:**
 - **New national rules may only be adopted in respect of an open point in a TSI** or in the case of an urgent temporary preventive measure
 - **Existing national rules are limited** to (1) networks and vehicles excluded from the scope of TSIs, (2) open-points listed in TSIs, (3) specific cases listed in TSIs, (4) when necessary to ensure technical compatibility with a network not yet in compliance with TSI, and (5) as an urgent preventive measure





National rules to be notified

Scope for national rules

- **TSIs specify the optimal level of functional and technical harmonisation to reach the Directive's objectives**
 - TSIs clearly identify which aspects of the essential requirements are not covered (eg open-points) and therefore the scope for national rules
 - Member States cannot make mandatory stricter requirements than those of the TSI
 - TSIs may provide that parts of a subsystem is to be subject to a safety risk assessment to ensure that the level of risk of an incident occurring is not higher than the objective for the service instead of detailed prescriptions



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Process

Notification

- **Any national rule which contains railway safety or technical requirements is to be notified under Directives 2016/797 -798**
 - The specific railway requirements are to be identified in the notification if the national rules includes non-railway requirements
- **Member States had to notify existing national rules before 16 December 2016**
- **National rules not notified don't apply for the purpose of Directives 2016/797 -798**
- **When notifying, Members States have to provide justification for the existence of national rules** (e.g. identification of the related open-point)



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Process

Notification

- **Until the Single Rules Database is available (in 2020), existing systems are to be used**
 - Reference Rule Database (RDD) for rules applicable for vehicle authorisation
 - Notif-it for fixed installations related national rules and safety rules
- **National rules in RDD and Notif-it are deemed notified**
 - Member States shall verify that all their relevant national rules are in those systems
- **From 16 June 2019, RDD and Notif-it will be the reference for ERA, NSAs and applicants in terms of applicable national rules.**



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Process

Evaluation

- **ERA programme of cleaning-up of national rules**
 - Started in 2016, it covers all national rules identified under Directive (EU) 2016/797 and Directive (EU) 2016/798
 - ERA will complete the analysis of notified national rules applicable to vehicles and fixed installations by June 2019
 - If not yet done, Member States must verify that redundant national rules have been repealed and that RDD and Notif-it fully reflect the cleaning up process
- **From June 2019, the programme is to focus on national safety rules**



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Process

Evaluation of rules applicable for vehicle authorisation

- **By 16 June 2019, RDD is to be updated to reflect ERA assessment of notified national rules** (when RDD status is not up-to-date)
 - Report on the evaluation of national rules of each Member States to be issued by ERA
 - The report may contain additional information such as recommendations to publish rules for critical open-points yet not covered
- **In case of negative assessment -> exchange of information and procedure laid down in Article 26 of ERA Regulation apply**
 - If required, the Commission may issue a Decision to request the modification or repeal of national rules
- **For new draft rules, ERA assessment following notification** (Article 25 of ERA Regulation applies)



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Process

Evaluation of national rules on fixed installations

- **By June 2019, Notif-it is to be updated to reflect ERA assessment of notified national rules** (when Notif-it status is not up-to-date)
- **National rules for fixed installation to be notified in the future**
 - They need to be justified under cases specified in Art 13 of Directive 2016/797
- **For those rules, ERA assessment following notification** (Articles 25/26 of ERA Regulation)
 - In case of negative assessment -> exchange of information and procedure laid down in Articles 25/26 of ERA Regulation apply



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Process

Evaluation of national safety rules

- **Safety rules, cf presentation in RISC 83**
 - **National rules types 1** (safety targets and methods), **2** (safety certification methods), **4** (IM and RU rules) and **6** (accident investigation) as defined in Annex II to Directive (EU) 2016/798 **cannot be kept**
 - **OPE TSI revision clarifies scope of remaining national rules** (type 3 – operational rules - and type 5 – staff doing safety critical tasks)
- **ERA will focus the support to MS in the framework of the cleaning-up programme on safety rules**
- **For unjustified rules maintained** such as types 1, 2, 4 and 6 rules that are kept, **ERA and Commission to take actions in accordance with the procedure laid down in Articles 26 of ERA Regulation**



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Thank you



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NNTR – CG meeting 11.07.2019

Hans Bierlein

All national rules in RDD were assessed and when possible commented.

Assessment report was sent to MSs (except PL, CZ and DE) 14.06.2019

Agency to decide how to proceed for the MSs the Agency does not agree on NTR or where clarifications/re-wording was requested.

- Bilateral discussions for the pending or not agreed topics will be organised after MS reply (e.g. discussion took place with BE 5.7.2019)
- Agency will draft technical opinions where we had a negative assessment.

Rules for NTR check applied by the Agency

1. NNTR for TSI conform vehicles **shall contain only** the **requirements on top of the TSIs** (no repetition of TSI clauses).
2. IN RDD only **requirements related to vehicle authorisation** shall be notified. Rules related to train operation shall be notified in Notif-IT and or the network access document
- 3. Information** not part of VA should be erased (under internal discussion)
4. ANMC (acceptable national means of compliance) requirements shall be always linked to a notified NTR.
5. The requirements shall be assigned to the correct RDD clause, e.g.:
 - 12.2.1 - specification of class B system
 - 12.2.2 - STM specific requirements
 - 12.2.3 – Transitions including class B – Class B and ETCS – Class B transitionsNo requirement in RDD headers e.g. 12.1 (on-board radio system)

1. CCS NTRs shall be based on:

- Open points in the TSI
- Specific cases where further explanation is needed
- Class B (including STM) specifications
- TSI deficiencies e.g.
 - errors in B2 covered in B3 (Agency accept)
 - “errors” in the specifications (Agency does not accept, MS to provide a CR, NTR status to be re-discussed after EECT decision)

2. Additional sources are:

- TSI options (e.g. Loop infill), B3 error corrections (RDD 12.2.5.8)
- TTSV - ERA status “under discussion” (temporary requirements till IM ESC/RSC notification to the Agency)
- “Positive specific cases” (e.g. the use of 2W handhelds) (RDD 12.2.1.1)
- Additional functionality with impact on ERTMS (e.g. radio shunting) (RDD 12.2.5.8)

2016/798/EC Safety Directive Article 8 refer to Annex II

Rules to be notified (Type 3): common **operating rules** of the railway network that are not yet covered by TSIs, **including rules relating to the signalling and traffic management system;**

2019/773/EU TSI OPE Appendix I - List the topics where a rule can be notified

Shunting

Signalling rules

Rules related to the operational use of the national signalling system

Maximum speeds in degraded mode including running on sight

Running at caution

Local operational rule

Relating to specific local conditions where additional information may be needed — this is limited to requirements not covered by this Regulation

Operation during works

Safe operation of test train

Train visibility — Front end (see 4.2.2.1.2)

Existing Non TSI conform vehicles

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

Role of local/national authorities and emergency services

Notification of accidents and incidents: national instructions on modalities for notifications to authorities

Safety-related communications terminology (see Appendix C)

National operational instructions

Requirements on route knowledge under the national transposition of Directive 2007/59/EC (Train Driver Directive)

For CCS TSI OPE restricts the notifiable rules related to the operating of the national signaling system (including class B)

Requirements not covered by Appendix I should be handled by the assessment procedures and supervision of the NSA.

National technical requirements related to VA shall be notified in the RDD

National safety requirements

- when they fall under the topics listed in 2019/773/EU TSI OPE Appendix I shall be notified in Notif IT
- all others shall be published by the NSA as part of the assessment procedures and supervision of the NSA.

12	On-board control command and signalling	This is a header, no entry
12.1	On-board radio system	This is a header, no entry
12.1.1	Non-GSM-R radio system	Requirements for national radio systems if the installation on a vehicle is mandatory for authorisation. Notification to be made also when the class B system is only mandatory for a certain part of the network or is in use as an overlay.
12.1.2	GSM-R compliant radio system	This has to be seen as a header, no entry
12.1.2.1	Use of hand portables as cab mobile radio	Requirements related to hand portables fulfilling cab radio functions. Indicate here if the 2 Watt hand portable can be used as an option or not and what are the related requirements, restrictions, etc., taking into account Section 7.3.3. "ERTMS — On-board implementation" of Commission Decision 2012/88/EU ⁽¹⁾ .
12.1.2.2	Other GSM-R requirements	Other requirements related to GSM-R disturbances, installation of filters, etc., which cannot be categorised under the former points. This is the clause where testing (RSC), and all other additional requirement on GSM-R should be placed.

12.2	On-board signalling	This is a header, no entry
12.2.1	National on-board signalling systems	Requirement to have national on-board train protection systems installed on-board (such as EBICAB) and corresponding functional requirements. Notification to be made also when the class B system is only mandatory for a certain part of the network or is in use as an overlay.
12.2.2	STM requirements	Requirements related to STM solutions (separate STM or integrated within ETCS on-board).
12.2.3	Transitions	Requirements related to transitions between national on-board signalling systems and ETCS; between ETCS and ETCS etc., at the borders of or within the Member State. 12.2.3 covers all the transitions (might be part of the ESC tests at the end)

12.2.5	ETCS (2) cab signalling system	This is a header, no entry
12.2.5.1	Level crossing functionality	Requirements for the set of specifications No 1 in Table A2 of the Annex A to the CCS TSI laid down in Decision 2012/88/EU related to the level crossing functionality for ETCS on-board. For Baseline 2 only
12.2.5.2	Braking safety margins	Requirements for the set of specifications No 1 in Table A2 of the Annex A to the CCS TSI laid down in Decision 2012/88/EU related to the reliability of the braking curve for the on-board CCS. For Baseline 2 only
12.2.5.3	Reliability — availability requirements	Minimum reliability/availability requirements shall be specified in order to limit the decrease of the system safety due to the frequent occurrence of degraded situations.
12.2.5.4	Safety requirements	Safety requirements for ETCS DMI functions for the set of specifications No 1 in Table A2 of the Annex A to the CCS TSI laid down in Decision 2012/88/EU. For Baseline 2 only

12.2.5.5	Ergonomic aspects of DMI	Ergonomic DMI requirements for the set of specifications No 1 in Table A2 of the Annex A to the CCS TSI laid down in Decision 2012/88/EU. For Baseline 2 only
12.2.5.6	Interface with service brake	Interface requirements with the service brake for the set of specifications No 1 in Table A2 of the Annex A to the CCS TSI laid down in Decision 2012/88/EU. For Baseline 2 only
12.2.5.7	Other ETCS requirements (related to existing not interoperable networks)	ETCS requirements related to pre-B2 on-board equipment, compatibility with existing lines where pre-B2 equipment is installed. Or ETCS optional functionalities that may have an impact on the safe movement of the train. ETCS TSI ETCS options e.g. infill or exported constraints from non TSI compliant lines.
12.2.5.8	Specification of condition of use where ETCS on board does not implement all functions, interfaces and performances	Analysis of the impact when not implementing all functions, performances and interfaces specified in CCS TSI by the ETCS on-board subsystem. Useful for additional authorisations. This parameter cover conditions and restrictions of us in case not all the TSI requirements are implements, additional functionality e.g. radio remote controlled shunting, NTR from another MS still active – Analysis to be made case by case.

Trackside CCS components/systems impacted by the essential requirement “Safety” are:

- Interlocking's (including e.g. train detection, signals, switchable point equipment)
- Level crossings
- Block systems
- Train control and protection systems (e.g. ETCS)

ANNEX III

ESSENTIAL REQUIREMENTS

1. General requirements

1.1. Safety

1.1.1. The design, construction or assembly, maintenance and monitoring of safety-critical components, and more particularly of the components involved in train movements, must be such as to guarantee safety at the level corresponding to the aims laid down for the network, including those for specific degraded situations.

2. Requirements specific to each subsystem

2.1. Control-command and signalling

2.1.1. Safety

The control-command and **signalling installations and procedures** used must enable trains to travel with a **level of safety which corresponds to the objectives set for the network**. The control-command and signalling systems must continue to provide for safe passage of trains permitted to run under degraded conditions.

CCS trackside NTR

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TSI CCS covered:

- Full definition of ETCS (NoBo – Components, airgap, functionality, integration)
- Full definition of GSM-R (NoBo – Components, airgap, functionality, integration)
- Class B systems on-board (DeBo - MS to notify in RDD)
- Airgap for train detection

TSI CCS excluded:

Interlocking's, level crossings, block systems, trackside part of the class B train control and protection systems.

The TSI CCS is limited to the interoperable part (to ensure free train movement within Europe), therefore the interface and its underlying functionalities between CCS on-board and CCS trackside are covered. To further harmonise, the target system for train control (ETCS) and train communication (GSM-R) is completely (for the part ensuring interoperability) specified. The existing legacy train control and train communication systems (Class B) are captured in an Agency document and the MS has to notify (RDD) the relevant requirements for vehicle authorisation.

Trackside CCS objects could be seen as part of IoD Art. 13.2 (a) or Art. 13.2 (d) (e.g. for the class B systems)

2.2. Scope

The Control-Command and Signalling Subsystems TSI specifies only those requirements which are necessary to assure the interoperability of the Union rail system and compliance with the essential requirements.

Currently the CCS TSI does not specify any interoperability requirement for the interlockings level crossings and certain other elements of the CCS.

IoD	National rules for Fixed Installation to be notified by Member States	Subject to Agency Assessment
Art. 13.2(a)	Where the TSIs do not cover, or do not fully cover, certain aspects corresponding to the essential requirements, including open points as referred to in Article 4(6);	Yes-limited to open points called by TSIs. No for other directives.
Art. 13.2(d)	National rules used to specify existing systems, limited to the aim of assessing technical compatibility of the vehicle with the network	Yes, assessed as VA Rules

NSA shall authorise and provide guidance (this may include the definition of the requirements to be respected).

IoD Article 18

Authorisation for the placing in service of fixed installations

1. The **trackside control-command and signalling**, energy and infrastructure subsystems shall be placed in service only if they are designed, constructed and installed in such a way as to meet the essential requirements, and the **relevant authorisation is received** in accordance with paragraphs 3 and 4.
2. **Each national safety authority shall authorise the placing in service** of the energy, infrastructure and trackside control-command and signalling subsystems which are located or operated in the territory of its Member State.
3. **National safety authorities shall provide detailed guidance on how to obtain the authorisations referred to in this Article.** An application guidance document describing and explaining the requirements for those authorisations and listing the documents required shall be made available to applicants free of charge. The Agency and the national safety authorities shall cooperate in disseminating such information.

- NSA shall authorise for placing into service the trackside CCS Subsystem
- The requirements to be respected by the applicant shall be provided by the NSA by reference to:
 - documents published by MS, NSA, IM,....
 - Notified NTR
- The Agency does not check automatically such NTR, except for Class B modifications in case:
 - interoperability is impacted (change of functionality – in this case NTR for on-board is impacted too)
 - Network access will be limited (e.g. no slots in rush hours)