EUROPEAN
UNION
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FOR RAILWAYS

Moving Europe towards a sustainable and
safe railway system without frontiers.

Certification: Restrictions and added functions
Guideline for the European Union Agency for Railways template

Document History

Version	Date	Comments
0.1	20.02.2017	Release version
0.2	07.11.2019	Some clarification of the text
0.3	06.12.2019	Editorial modifications, clarification of "additional" and "optional' functions
1.0	18.06.2024	Update following the CCS TSI Regulation (EU) 2023/1695

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1.   Executive summary

It is the obligation of the NoBo (see TSI CCS [1]) to indicate directly or by reference in its certificate or accompanied documents which TSI CCS functions, interfaces or performance of the set of specifications chosen are not or only partly implemented as well as optional and additional functions implemented and to provide sufficient information to make it possible to identify:

- *the conditions under which the interoperability constituent (IC) or the subsystem can be used,*
- *for ICs the restriction on the use that will apply to the interoperability of a subsystem incorporating it.*

Concerning the **trackside subsystem** all TSI CCS functions are optional so the infrastructure manager can choose the functions to be implement. For the not completely implemented functions and all the additional functions implemented the NoBo obligation is applicable as well.

The certificate should mentioned the document containing the information concerning the restrictions and conditions of use, together with any other Condition for Use which does not have a link with restrictions, options or, additional functions. Currently the way to present the information is not harmonised. In order to overcome this situation, the TSI CCS [1] requires the European Union Agency for Railways to publish a template; this document provides the guide for the correct use of the template.

2.   Introduction

It is difficult to get in a standardised way sufficient information concerning product and/or Subsystem restrictions and conditions of use; certificates usually confirm conformity with the TSI and refer to a chapter in the technical file where further information could be found. Neither the way the information is presented nor its content and level of detail is harmonised. As required by TSI CCS [1] sections 6.5.1 and 6.5.2 and in order to harmonise the presentation of this information, the Agency has elaborated a template (link) to capture restrictions and conditions of use in a harmonised way. The template shall be filled by the manufacturer/applicant supported by the NoBo. In case the NoBo does not fully agree with the applicant's point of view, both opinions should be given.

This document (as requested by the former NB Rail ad hoc WG) has to be seen as guideline how to fill the Agency template.

Note: None of the information required to be filled in the template is in addition to what is already required by the TSI CCS [1].

Abbreviations

Table 1: Table of abbreviations

Abbreviation	Definition
Agency	European Union Agency for Railways
CCS	Control Command and Signalling
CR	Change Request
DeBo	Designated Body
EC (EU)	European Commision
FIS	Functional Interface Specification
FRMCS	Future Railway Mobile Comunication System
FRS	Functional Requirement Specification
GSM-R	Global System for Mobile communications - Railway
IC	Interoperability Constituent
IM	Infrastructure Manager
INEA	Innovation and Networks Executive Agency
LEU	Line Electronic Unit
MR1	Maintenance Release 1
NoBo	Notified Body
NSA	National Safety Authority
OBU	On Board Unit
RAMS	Reliability, Availability, Maintainability and Safety
RBC	Radio Block Center
RFC	Rail Freight Corridor
RU	Railway Undertaking
RS	Rolling Stock
RFC	Rail Freight Corridor
SMS	Safety Management System
SRAC	Safety Related Application Conditions
SRS	System Requirement Specification
SS	Subsystem
STM	Specific Transition Module
TSI	Technical Specification for Interoperability
4th RP	4th Railway Package

3.   Reference documents

Table 2: Table of reference documents.

Ref. N°	Title	Reference	Version
1	TSI CCS	COMMISSION REGULATION (EU) 2023/1695	08/09/2023

4. Definitions

Authorising Entity: "For vehicles and/or vehicle types, NSAs or Agency authorising the vehicle type and/or the placing on the market of vehicle(s). For trackside, the NSA authorising to place in service."

NoBos issue: "EC certificates of conformity/suitability for use" and "Certificates of verification".

DeBos issue: Note: This is outside the scope of this document and only used as a placeholder not to forget that DeBo certificates for ICs are not foreseen.

Declarations from the applicant are always called "EC" declarations …..

5. What is stated in the TSI CCS [1]

TSI CCS chapter 6 explains how errors and added functionality for IC and SS have to be handled.

Section 6.5.1 put an obligation on the ERTMS NoBo Network and the Agency to agree on the way conditions and limits of use have to be handled in the certificates and technical files.

Appendix D refers to the were to find the template.

6.5.1.   Content of EC certificates

As per Commission Implementing Regulation (EU) 2019/250 the notified bodies shall describe the restrictions and conditions for use of interoperability constituents and subsystems in the relevant EC certificates.

Notified bodies shall coordinate with the Agency the way in which errors, restrictions and conditions for use of interoperability constituents and subsystems are managed in the relevant EC certificates for verification and their accompanying technical files in the working group set up under Article 29 of Regulation (EU) 2016/796. In the accompanying technical file issued by the NoBo the template of Appendix D shall be used.

6.5.2.   Content of EC declarations
As per Implementing Regulation (EU) 2019/250 the interoperability constituent's manufacturer or the subsystem applicant shall describe in the EC declaration of conformity or verification the restrictions and conditions for use.
In the accompanying technical files the template of Appendix D shall be used.

Appendix D
In this appendix the template for description of conditions, restrictions and added functions is provided.
The document describing the template and its use is in the Agency Web page in the ERTMS section.

6. The template from the European Union Agency for Railways

As indicated in TSI CCS [1] Appendix D, the template is published in the Agency Website (link).

The template has to be filled for each IC, part or Subsystem. The Agency will take care to synchronise the template with each TSI update.

The template is split in 4 sections:
1. General information
2. Restrictions and conditions
3. Options
4. Added Functionality

Section 2 to 4 needs to be filled only when applicable.

6.1 Section 1: General information to be filled

6.1.1 The entry in the field "**IC identification/Project concerned**" (free text) should correspond to description of the IC or SS from the NoBo certificate.

6.2.1 The **"Type of certificate"** has to be selected; actually, according to TSI CCS [1] there are the following possibilities:

› *IC ETCS on-board*
› *IC odometry equipment*
› *IC grouping of ETCS on-board and odometry*
› *IC Interface of External STM*
› *IC GSM-R voice cab radio*
› *IC GSM-R data only radio*
› *IC GSM-R SIM card*
› *IC ATO on-board*
› *IC FRMCS on-board voice application*
› *IC on-board FRMCS*
› *IC FRMCS profile*
› *IC RBC*
› *IC Radio in-fill unit*
› *IC Eurobalise*
› *IC Euroloop*
› *IC LEU Eurobalise*
› *IC LEU Euroloop*
› *IC grouping of Eurobalise and LEU*
› *IC grouping of Euroloop and LEU*
› *IC Axle Coutner*
› *IC Marker Board*
› *IC ATO Trackside*
› *On-board CCS subsystem voice radio part*
› *On-board CCS subsystem data radio part*
› *On-board CCS subsystem ETCS part*
› *On-board CCS sussystem ATO part*
› *Full on-board CCS subsystem*
› *Trackside CCS subsystem radio part*
› *Trackside CCS subsystem ETCS part*
› *Traceside CCS subsystem ATO part*
› *Trackside CCS subsystems train detection part*
› *Full trackside CCS subsystem*

6.3.1 The **"Applicable Regulation"** has to be selected, based on this decision the optional and/or additional functionalities have to be handled too. Actually, there are the following possibilities:

› *2002/731/EC*
› *2004/447/EC*
› *2006/679/EC*
› *2006/860/EC*
› *2007/153/EC*
› *2009/561/EC*
› *2010/79/EC*
› *2012/88/EU*

- › *2012/462/EU*
- › *2012/463/EU*
- › *2012/696/EU - set of specifications #1*
- › *2012/696/EU - set of specifications #2*
- › *2014/15/EU - set of specifications #1*
- › *2014/15/EU - set of specifications #2*
- › *(EU) 2016/919 - set of specifications #1*
- › *(EU) 2016/919 - set of specifications #2*
- › *(EU) 2016/919 - set of specifications #3*
- › *(EU) 2019/776 - set of specifications #1*
- › *(EU) 2019/776 - set of specifications #2*
- › *(EU) 2019/776 - set of specifications #3*
- › *(EU) 2020/387 - set of specifications #1*
- › *(EU) 2020/387 - set of specifications #2*
- › *(EU) 2020/387 - set of specifications #3*
- › *(EU) 2020/420 - set of specifications #1*
- › *(EU) 2020/420 - set of specifications #2*
- › *(EU) 2020/420 - set of specifications #3*
- › *(EU) 2023/1695*

6.4.1 The "**ETCS Level implemented**" has to be selected in case it is a trackside project. Level 3 is only to be used in case of older regulations. In Regulation (EU) 2023/1695 Level 2 and Level 3 have been merged.

6.5.1 The appropriate "**ETCS on-board**" configuration has to be selected in case it is an on-board project.

6.6.1 The situation concerning "**Infill implemented**" has to be selected.

6.2 Section 2: Restrictions and conditions

This part describes the type and the consequences in operation and the conditions for use concerning the restrictions and conditions listed.

The level of detail to be provided in the free text fields should be sufficient for:

- *an Authorising Entity to judge if an authorisation can be given,*
- *an IM/RU to understand the conditions for use of the vehicle and other restriction, to consider them into the SMS,*

For each "restriction" the following fields have to be filled; the number (column A) defines the number to identify each individual "restriction".

6.1.2 "**Scope of non-conformity**" is a free text field, here the documents/titles/clauses/sections (e.g. SUBSET-026 chapter x.x.x; full SUBSET-XXX) of the Appendix A documents concerned or the part of them which apply, has to be listed.

6.2.2 In the corresponding "**Evaluation summary**" field (free text) requirements not implemented (e.g. calculation of release speed on board not implemented) should be described. In case they are implemented in a non-compliant way the difference should be explained (e.g. delay in command of emergency brake too long).

6.3.2 The field "**Type of restriction**" was introduced based on a request from RFC 1. It provides a kind of high level information mainly for the Authorising Entity. The following cases can be selected (more background information could be found in Annex 1):

› *Restriction with impact on safety*
› *Restriction with impact on interoperability*
› *Restriction with impact on functionality but not on interoperability*
› *Restriction with no impact on functionality nor interoperability*
› *Conflicting (or unclear) requirements*
› *Free text*

6.4.2 The field "**Type of non-conformity**" should indicate which requirements are not respected and how, the following cases could be selected:

› *full ETCS level not supported*
› *full ETCS mode not supported*
› *interface not implemented*
› *full mandatory function not implemented*
› *low level functional requirement not implemented*
› *mandatory function implemented in a non TSI compliant way*
› *interface requirement implemented in a non TSI compliant way*
› *performance requirement not respected*
› *RAMS requirement not respected*
› *conflicting requirements*
› *other*
› *Free text*

"full mandatory function" can be identified as the text below a title (chapter) in the SRS or a FIS

"low level functional requirement" can be identified as one or more statements in the SRS or a FIS.

6.5.2 In the columns for "Consequences" the "**Type of consequences**" need to be listed, its pre-defined types of consequences are:

› *no reaction receiving an input:*
› *non TSI-compliant reaction receiving an input*
› *inability to receive an input*
› *inability to understand a TSI compliant input*
› *inability to send an output*
› *generation of non TSI-compliant output*
› *non TSI-compliant functionality*
› *non TSI compliant delays*
› *inability to process input information*
› *RAMS requirements not respected*
› *other*

6.6.2 The field "**Description of consequences**" (free text) should describe possible non-TSI compliant situations and the conditions in which they might occur, e.g.:

› *"inability to send an output" refers, for example, to inability to generate a certain message*
› *"generation of non TSI-compliant output " refers, for example to the generation of a non TSI compliant message*

> › *"non TSI-compliant functionality " is, for example, calculation of braking curve in a non TSI compliant way*
> › *"inability to process input information", if, for example the memory of the equipment is not enough to store received messages before they being processed*

should be described (more in general the behaviour of the IC/SS due to a concrete functionality which is not fulfilled).

In case of "RAMS requirements not respected" the free text should indicate if this is in general or describe the SRAC.

6.7.2 In the part "Conditions" the section "**Type of condition**" to be filled contains the following pre-defined types:

> › *limits for the use in combination with other TSI compliant equipment*
> › *exported functional requirements not compliant with TSIs*
> › *exported performance requirements not compliant with TSIs*
> › *other*

6.8.2 In the field "**Description of condition**" (free text) the condition for use according to the associated non-conformity depending if it effects (or not) to the operation has to be described.

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6.3 Section 3: Options

Functionality could be "optional'. Table 6.1 (No.1b) of TSI CCS [1]) define the way to assess it:

- Optional functionalities/functions must be fully specified, in some cases including the way to test them, and when implemented they do not lead to conflicts with the implemented functions specified in the TSI CCS [1]. The optional functionalities/functions for ETCS are listed in tables 5-1 and 5-2 of TSI CCS [1]) while for GSM-R they appear as M/O requirements in the Eirene FRS and SRS and other GSM-R specifications. As the functionalities/functions are described (and in some cases, their tests also), the NoBo will check that the "optional" functionalities/functions are implemented and TSI conform while assessing the test results.

6.1.3 In field "**Description of the option**" (free text) a brief description of the optional functionality has to be given.

6.2.3 Finally in field "**Consequences on operation and conditions for use**" (free text) should contain.

6.4 Section 4: Added functionality

It is possible to include "additional functionality". Table 6.1 (No.1c) of TSI CCS [1]) define the way to assess it:

- Added functionalities/functions not fully specified in the TSI CCS [1] could be for example. a specific functionality added by the RU (e.g. trackside monitoring) or a functionality chosen from a different set of Appendix A specifications. In this case the NoBo identifies which additional functionalities/functions and interfaces (not specified in the TSI CCS [1]) are implemented and checks

that they do not lead to conflicts with other implemented functionalities/functions specified in the TSI CCS [1]. The functionality/function itself will be verified/checked by the applicant or the DeBo.

6.3.3 The field "**Reasons for added functions**" should note what has triggered the add on, the following cases could be selected:

  › *National Rule*
  › *CR from other baselines*
  › *Request from the applicant*

6.4.3 In field "**Description of the added functionality**" (free text) a brief description of added functionality has to be given; in case of an NTR the link to the corresponding requirement might be sufficient.

6.5.3 Finally in field "**Consequences on operation and conditions for use**" (free text) should contain.

Annex A – Example: NSA Sweden

Note: The cases listed hereafter might not remain after a technical discussion would have taken place, Annex A is only to illustrate examples for the different categories.

➢ ” Restriction with impact on interoperability”

Requirement: RBC initiated connection establishment

Evaluation summary: Not supported

NoBo Comment: Depending on the wayside implementation, this may lead to interoperability problems

Classification: Restriction with impact on interoperability

➢ ”Restriction with impact on functionality but not on interoperability”

Requirement: Train Data

Evaluation summary: Loading gauge and train running number from external device (e.g. USB) not supported. The driver can enter these data manually but not by an external device.

NoBo Comment: Functionality not supported

Classification: Restriction with impact on functionality but not on interoperability

➢ ” Restriction with no impact on functionality nor interoperability”

Requirement: ETCS is required to be functional to a maximum train speed of 500 km/h.

Evaluation summary: According to the On-board SRS: The limit of V_MAXTRAIN when configured is set to 400 km/h being the max speed defined for the on-board system. There is no other restriction given for this parameter - driver can enter any value up to 400 km/h.

NoBo Comment Not visible on subsystem level.

Classification Restriction with no impact on functionality nor interoperability

➢ ”Conflicting requirements

Requirement: Other sequences of primitives.

Evaluation summary: Other sequences not supported.

This requirement is not possible to fulfil as no references are given to what these "other sequences of primitives" are. This "requirement" should be "re-tagged" to informational.

Connection releases according to section 5.4.1.1-5.4.1.6 of Ss-037 are supported only

NoBo Comment: The TSI is unclear.

Classification: Conflicting requirement