



***ERA – NFM - BME
EU Interoperability Conference
Responsibility of NoBo & DeBo
in the authorization process***

Tivadar Szabo

**Director
ERTMS Expert
Chairman NB-Rail CCS WG**

**KTI Institute for Transport Sciences
Certification Directorate**

Agenda



- **Basic Roles of NoBo & DeBo**
- **Italian CCS Issues - RINA**
- **KTI – Hungarian Issues**
 - **INF**
 - **ENE**
 - **CCS**

Notified Body Designated Body

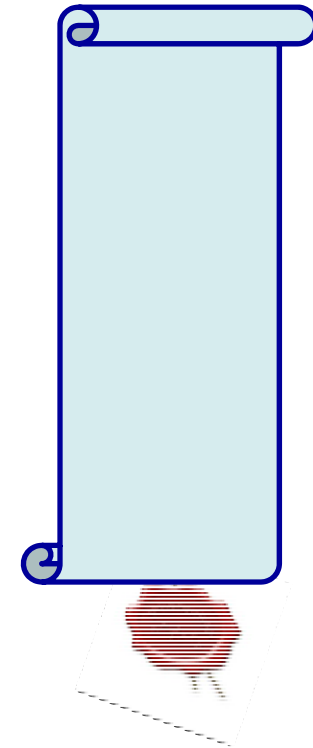


➤ **NoBo – Notified Body**

- Notified Body by NSA / Accreditation & Recognition
- **European** wide authority for assessment
- Certifies EU conformity – **TSI**

➤ **DeBo – Designated Body**

- Designated Body by Hungarian NSA
- Assessment authority for **National Rules**
- Certifies National conformity - **NTR**
 - **Everything beyond TSI**





Notified Body



Notified body means a body as defined by Article 2(j) of Directive 2008/57/EC;

CERTIFICATE OF VERIFICATION issued by a NoBo

For the purpose of this Directive, the verification by reference to TSIs is the procedure whereby a notified body checks and certifies that the subsystem complies with the relevant technical specifications for interoperability (TSI). This is without prejudice of the obligations of the contracting authority or manufacturer (i.e. the applicant in the meaning of Article 18) to comply with the other applicable legislation deriving from the Treaty, including any verifications by the assessment bodies established by the other legislation

'DECLARATION OF VERIFICATION OF SUBSYSTEMS'

A declaration of verification of a subsystem is a declaration established by the "applicant" within the meaning of Article 18 in which he declares on his sole responsibility that the subsystem concerned, which has been



Designated Body



national rules' means all binding rules adopted in a Member State, irrespective of the body issuing which contain railway safety or technical requirements, other than those laid down by Union or national rules which are applicable within that Member State to railway undertakings, infrastructure managers or third parties;

Designated body' means a body designated by a Member State in accordance with Article 17(3) of Directive 2008/57/EC for verification of compliance of a subsystem with the national rules;

CERTIFICATE OF VERIFICATION issued by a DeBo

In the case where national rules apply, the verification shall include a procedure whereby the body designated pursuant to Article 17(3), third subparagraph, (the designated body) checks and certifies that the subsystem complies with the national rules notified in accordance with Article 17(3) for each



National Technical Rules (NTR)

(~ 11,000 NTR)



System components as subsystem not included in TSI

Not regulated under National competence by TSI

Technical specification of those system parts which covered by TSI, but not regulated in TSI (subsystem and systems component)

Non interoperability function but safety

Not regulated by TSI, but the NTR is “more strict” due to National requirements

Not not opposite with the interoperability

Platforms can be wider due to national requirements



National Technical Rules

(Thoughts)



Issues usually arise – when there is non existing harmonized standard

- 1 Applicant does not indicate others (DIN, ISO etc.) STDs, or Project (Tender) documentation does not contain any

For Railway Safety the NTR is highly important

- 1 Compliance with interoperability does not provide safe and efficient Railway Operation by itself

Question...

- 1 Any plan from ERA of specifying NTR at any level, or it will remain at National competence?



Notified Body Designated Body



**KTI is registered
Notified Body & Designated Body
and granted to execute EU conformity
Assessment, and issue
EC Certificate of Verification
HU Certificate of Verification
for ALL subsystem**

Railway Infrastructure including (INF + PRM)

➤ **Control- command and Signaling (CCS)**

➤ **Railway Energy (ENE)**



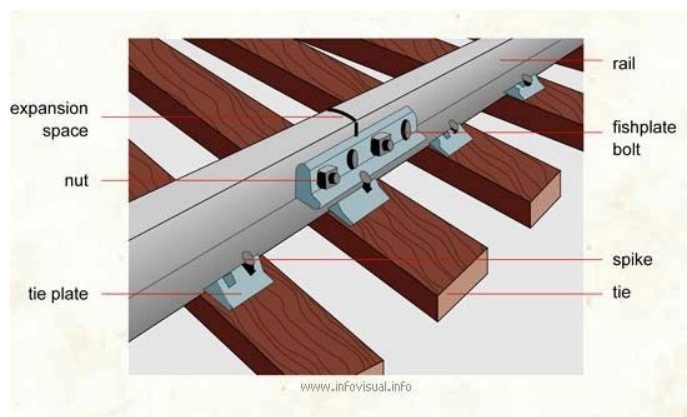


INF – Issues I.



key areas where DeBo Assessment should be executed

new development & Renovation on subsystems and system components
where it is NOT defined in TSI but the use of them critical from Railway safety



maintenance on subsystem already certified by Interoperability OR a
component change by the Operator in the already certified system



INF – Issues II.



new development & Renovation on subsystems and system components where it is NOT defined in TSI but the use of them critical from Railway safety

Classification of System components NOT specified in TSI brings up several issues.

Construction components designated only for Railway environment will contribute for the compliance of basic TSI requirements.

Construction components implemented into Railway environment but NOT designated for, special Railway requirements MUST be considered.

DeBo Certification Should be required for the above cases since the 305/2011/EU (CPR) is applicable for those components.

It should be mandatory to provide DeBo certification for those components for



INF – Issues III.



Maintenance on subsystem already certified by Interoperability OR a component change by the Operator in the already certified system or system part

Operator MUST maintain the validity of the Certification over lifetime, BUT there is NO firm rule or legislation.

During maintenance, the use of not-certified or uncontrolled components could lead to withdraw the system certificate by NoBo & DeBo

HOW the assessment body gets information about this?

Replacement of system component without Certificate according to the INF TSI 6.5.3. – It is the responsibility of the maintenance entity to ensure the component replacement will maintain interoperability and basic requirements. Component MUST be Certified, but the TSI does not disclose WHAT type of Certificate!

Replacement MUST be DeBo task and DeBo Certificate (since it is NOT NoBo task)



ENE – Issues I.



According to ENE TSI (1301/2014/EU)

7.1. *EC Certificate can be issued till 2021. may 31., if requirements in 6.3 are fulfilled – even if the subsystem includes components without EC Compliance Declaration.*

7.2. *Type or Construction Certificate of Interoperable Constituent is valid for 7 years. During this time period same type of constituent can be replaced w/o new assessment.*

In Hungary, the EC Compliance Declaration for CATENARY NOT available.

Assessment of the Catenary system can be done only when the Catenary

system implemented based on the design documentation



ENE – Issues II.



ENE TSI chapter 5. details of what is system component and what is not system component

Concept (denomination) of Catenary definition is NOT clear in TSI, it should be considered to make the ENE TSI 5.1 more precise and explicit.

ENE TSI 5.2 – system component performance and requirement – can be extended after more explicit definition will be done in 5.1.

Catenary height in Hungary does not comply with the recent TSI requirement.

The “famous” 6000mm vs. 5750 mm.

The issue not technical – this system works – but rather interpretational.

EC Certification cannot be issued until de-regulation of system adjustment will be done

In Addition: Designer – Suppliers – Authority interpret the Catenary height slightly differently – there is NO common practice

CCS TSI Issues

Federica Fornari
CCS Lead Expert
RINA Services
federica.fornari@rina.org

lack of GSM-R Test Specifications

performance requirements → Subset 093 often required at contractual level, but not in the CCS TSI

MS requirements → contractual requirements.

would be better to have EU requirements defined in the TSI

Italian Case

Federica Fornari
CCS Lead Expert
RINA Services
federica.fornari@rina.org

Italian NRD published -- > Decreto 1/2016: «Norme tecniche nazionali in materia di sottosistemi costituenti i veicoli ferroviari relative alla autorizzazione messa in servizio dei veicoli»

In particular, for «GSM-R Voice Cab Radios» there are some national requirements to be implemented

Automatic network selection» mandatory (but not EIRENE (MI))

Roaming agreements with foreign GSM-R operators missing → problems in the use of foreign SIM cards

Interference between GSM-R and ETCS antennas → installation of filters or minimum distance



CCS – Issues

Track-side Subsystem



S system assumes the existing safety systems (both station and line) with fool-
operation with all basic safety requirement

S system receives the information from the safety system implemented on the
national requirement, therefore the safety level of ETCS determined by the national
em.

support the implementation of ETCS which improves the interoperability but not
tly the safety level.

s – required for ETCS L2 – need to be connected to the national safety system,
fore proprietary interfaces need to be developed and redundant system need to

This area recently non-regulated at “ERA level”!

Level Crossing – the classic example – induce **proprietary solutions** due to the
of MI requirement in FRS and SRS and NO homogeneous solution in ETCS.

The DoDo assessment will face into difficulties due to the lack of technical



CCS – Issues On-Board Subsystem



nal Class B. system – inherited from the past – does not comply with the SIL 4
ements

equipped with ETCS and Class B. system will serve engines without STM
le together with engines equipped with ETCS/ ERTMS systems

asily be assumed, the duality of the system eventually will lead to lower the
r level of the line to the Class B system, or even worst.

ion:

*How the Agency will handle the issue of ETCS/ERTMS and Class B. (w/o STM
module) co-existence and safety knowing the difference between the two system
n safety level?*

*We know the safety level will not reach SIL 4, and different engines will use the
ne randomly.*



CCS – Issues

General Comments



ay Safety Equipment implemented 50-100 years ago and Class B System
mented 30 years ago – CANNOT BE excepted to have Certificate but CAN
de information for ETCS installation

S system alone CAN HAVE SIL 4 approval, but the complete system CANNOT
ategorized as SIL 4 level

MS/ETCS implementations depend on EU funding support for Hungary – but
s B systems will operate still long years from now

TM module exist for Class B systems – ETCS and Class B will be in operation
parallel for long



CCS – Issues

GSM-R & ETCS



Verification of GSM-R and ETCS subsystems MUST be handled carefully when they are implemented in independent projects and in a different time-line.

What is required for ETCS from GSM-R to support ETCS implementation

- ✓ **Capacity**
 - ❖ Expected traffic determines GSM-R channels especially for emergency situations, unexpected traffic, etc...
- ✓ **Performance requirements**
 - ❖ GSM-R system should provide QoS parameters (end-to-end transmission)
- ✓ **RAMS**
 - ❖ General requirement for Reliability, Availability and Maintainability
- ✓ **Safety related requirements**
 - ❖ General system safety with regards to EuroRadio specification

GSM-R to support ETCS test

- Interface requirements for RBC
- QoS or SubSet 093



KTl = NoBo & DeBo

Thank You

Tivadar Szabo

Director

ERTMS Expert

Chairman NB Rail CCS WG

