

New scopes for certification

ERTMS 2022 Conference

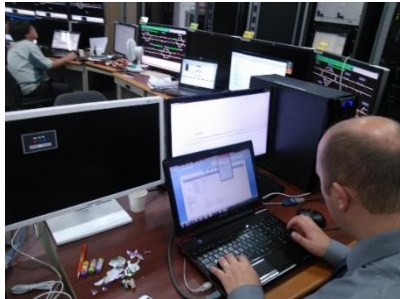
Safe. Connected. Without Frontiers.

Valenciennes

Luca Macchi

The importance of an independent Network:

EAL was created to gather the contributions of all accredited laboratories and work as an integrated network. Promoting remote testing.



From field to Lab: System Lab Tests

ETCS system tests performed on track for the entire European network would be chaotic

In the light of a Single European Railway Area (SERA) creation, the expected number of cross tests is so huge that the execution on track will cause considerable delays.

Validity of lab test is fully demonstrated through the experience of **more than 10 years** executing this kind of tests.



European harmonization of the ESC/Operational Scenario tests

EAL labs can strongly contribute to harmonize System (Operational Scenarios and ESC) Tests as wells as trackside component tests.

EAL strongly support the European standardization of:

- Operational Test
- System Tests
- Track Side Tests

ISO 17025
Accredited Labs
from EAL Members

- ✓ ESC (System Level)
- ✓ KMS (Component Level)
- ✓ RBC (Component Level)



Laboratories capabilities (Subset-076 and beyond):

EAL labs not are only prepared to test SS-085 and SS-076 but many other kind of tests, in particular:

Interoperability Constituents and Products Tests:

- RBC tests based on Subset-026 requirements;
- Euroloop Tests according to Subset-103;
- EDOR and Cab Radio QoS Tests according to UIC O-2475;
- KMC and KMS Tests according to Subset-114 and Subset-137 requirements;
- Eurobalise Tests according to Subset-085, Subset-116 and Subset-102;
- Axle Counters according to EN 50617-2;
- ETCS On-Board Tests according to Subset-076.

ESC, Subsystems and Systems Tests:

- ETCS On-board – RBC Tests according to ESC Type checks defined at National Level;
- Trackside – On-Board Subsystems Operational Scenarios;
- Trackside Interlocking – RBC integration tests;







Laboratories capabilities (Subset-076 and beyond):



ESC, Subsy

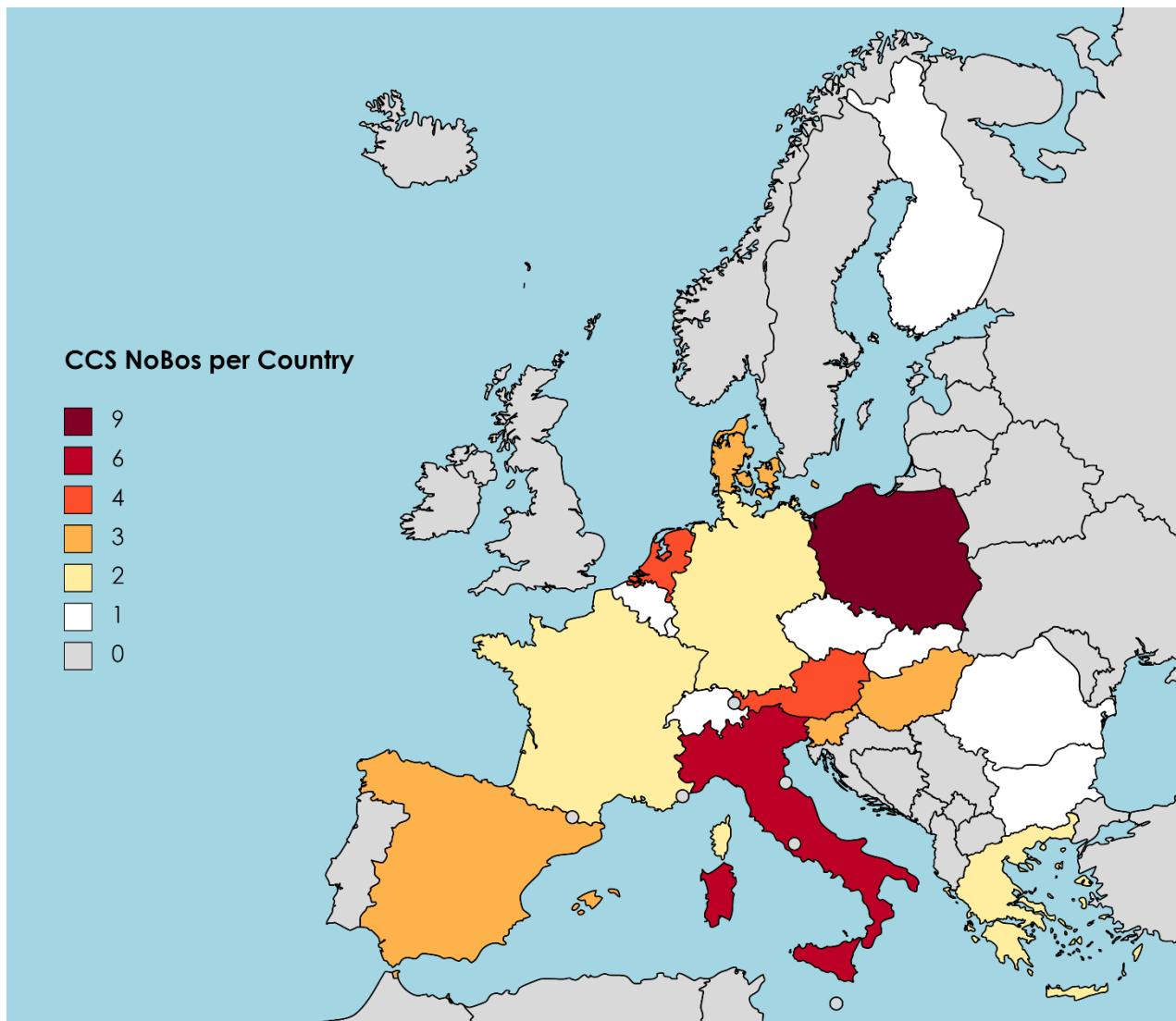
- ETCS On
- Tracksid
- Trackside Interlocking

EAL Members:

	<p>Centro de Estudios y Experimentación de Obras Públicas</p>	<p>C/Alfonso XII, 3. 28014 Madrid Spain</p>
	<p>Deutsches Zentrum für Luft- und Raumfahrt e.V. Institute of Transportation Systems</p>	<p>Lilienthalplatz 7, 38108 Braunschweig, Germany</p>
	<p>ITALCERTIFER</p>	<p>Piazza della Stazione, 45 50123 Firenze Italy</p>
	<p>Multitel ASBL</p>	<p>2 rue Pierre et Marie Curie 7000 Mons Belgium</p>
	<p>SNCF Voyageurs - Direction du Matériel Centre d'ingénierie du Matériel (CIM) - Laboratoire ERTMS France</p>	<p>4 Allée des Gémeaux 72100 Le Mans France</p>
	<p>RINA SERVICES S.P.A.</p>	<p>Via Corsica, 12 - 16128 Genova Italy</p>



NoBos for CCS in Europe



NB-Rail is a continuously growing association that today counts on 49 NoBos accredited for CCS Sector.

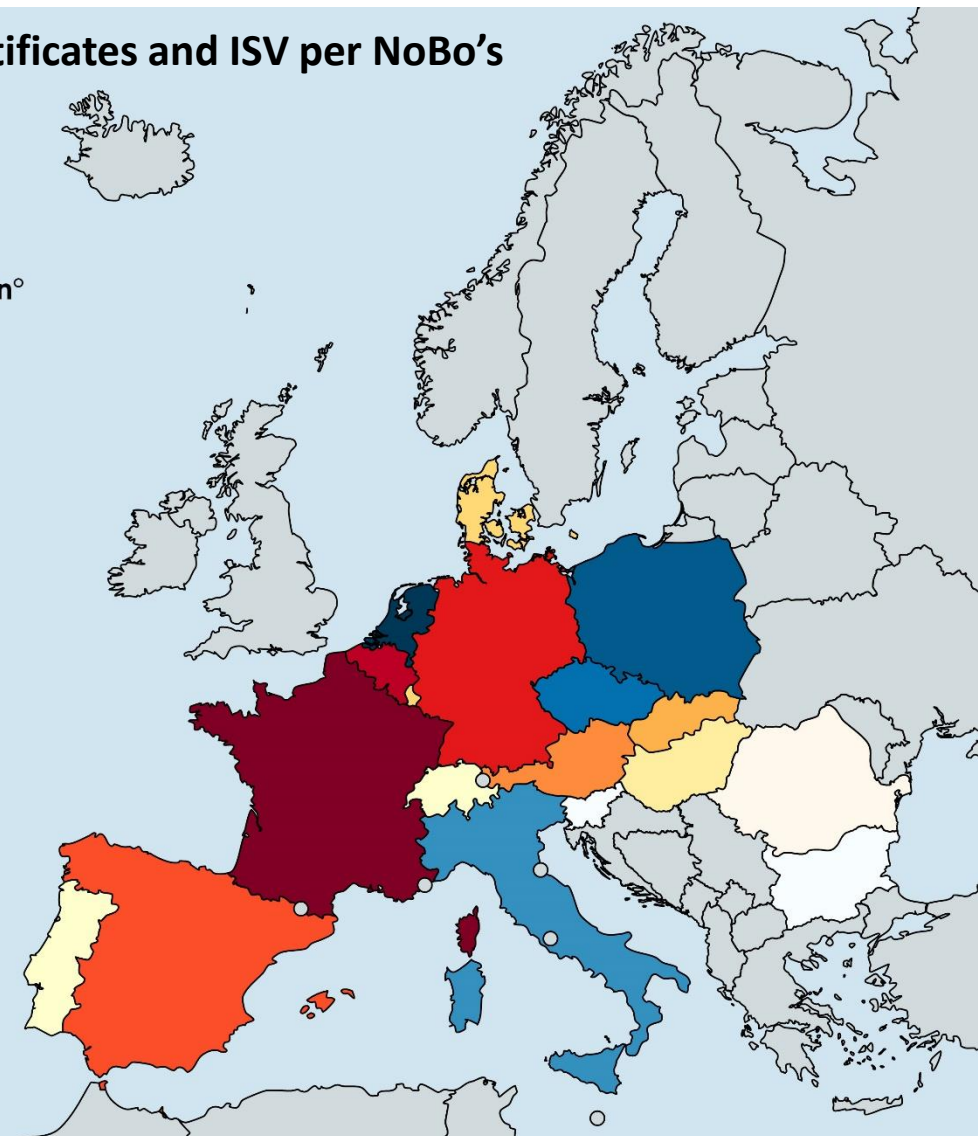
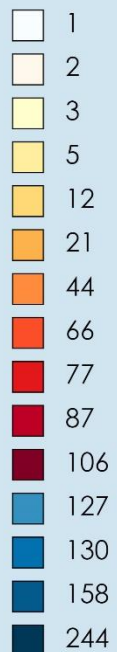
NB-Rail strongly support the development of the TSI-CCS, and related documents, to speed up the deployment of ERTMS/ETCS all over European Community.



NoBos Activities

Subsystems Certificates and ISV per NoBo's Country in 2021

Certificates and ISV n°



NoBos, with their certification activities, provide assurance that CCS systems are developed taking under control risks related to:

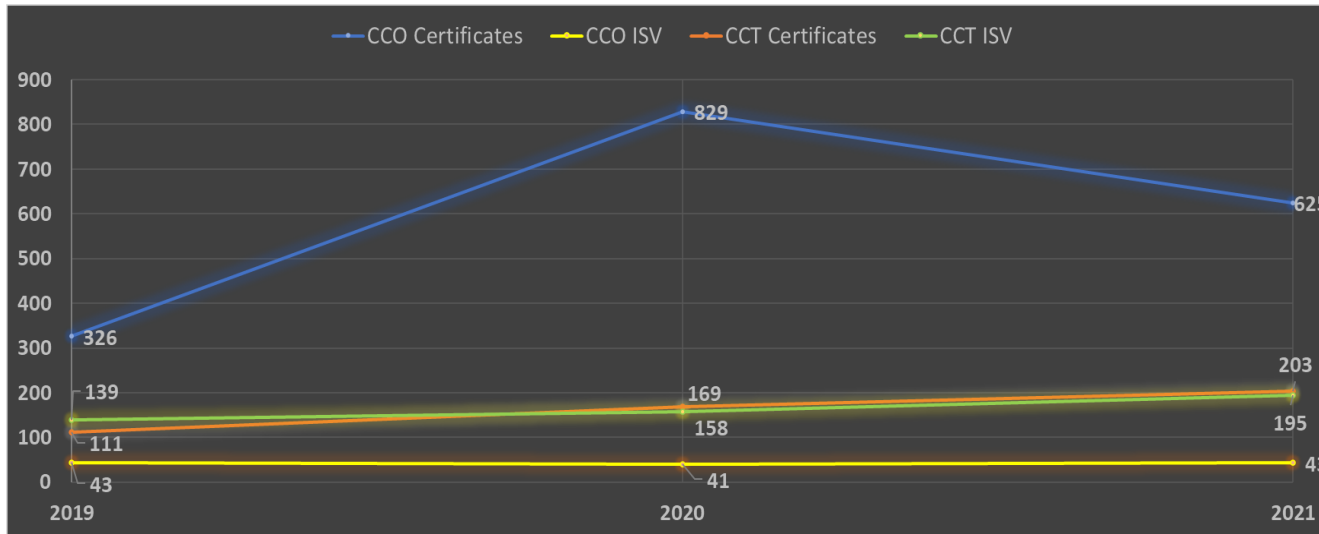
- Safety
- Reliability and Availability
- Technical Compatibility



In few words **INTEROPERABILITY** in a **SAFE** and **RELIABLE** Railway System.

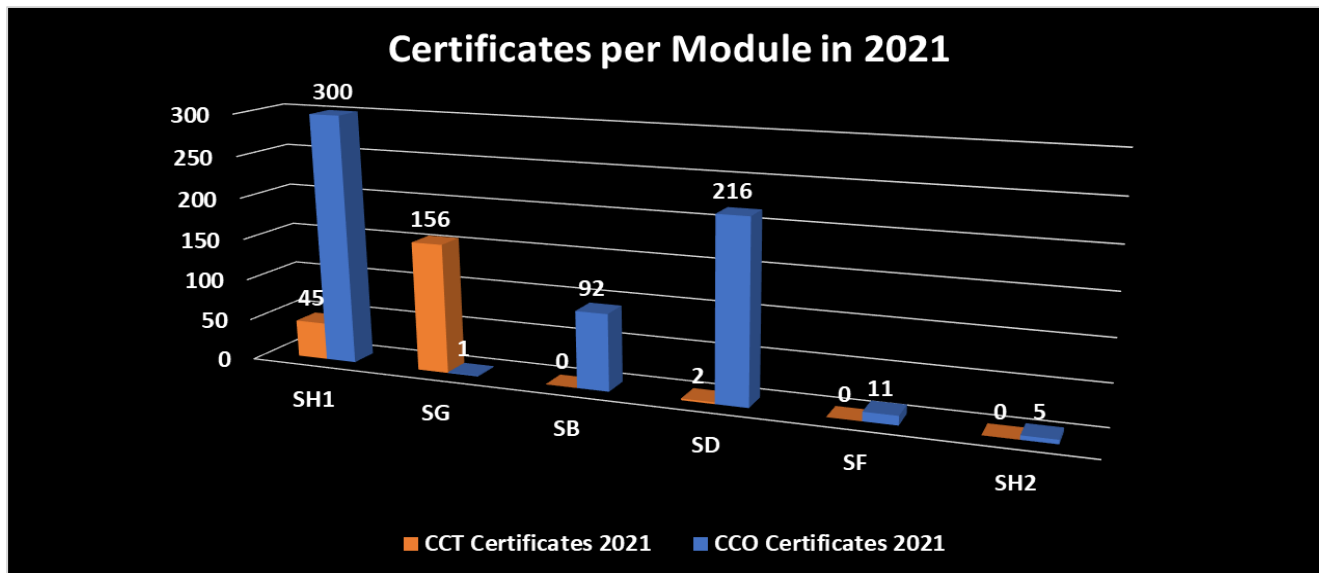


NoBos Certifications trend



ERTMS/ETCS deployment has accelerated

Experience on projects has shown that early involvement of NoBos is the key to anticipate certification related issues and to definitely save TIME and MONEY.

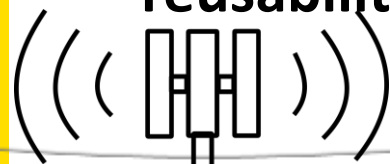




New Certification Activities

NoBos are just marginally involved in the ESC and RSC assessment and, according to the TSI application Guide, their role is limited to a check of the completeness and the final positive result.

NoBos should be more actively involved to assess the test specifications, the adequacy of the laboratories for the specific tests and the final results for ESC testing to ensure a high value and reusability of lab tests of ICs for ESC checks.



GSM-R

EUROBALISE





A New IC – the Axle-Counter

Axle-Counter has been introduced as Interoperability Constituent by TSI-CCS amendment (EU) 2019/776.

The ERA/ERTMS/033281 rev 4.0 “INTERFACES BETWEEN CONTROL-COMMAND AND SIGNALLING TRACKSIDE AND OTHER SUBSYSTEMS” is written with the Vehicle perspective, and it doesn’t refer direct requirements for axle-counters or trackside Subsystem, posing doubts in the certification activities. This aspect should be improved in the next releases of the interface document.

However, thanks to NB-Rail-EUAR cooperation, up to now 22 Axle Counters have been certified and the NoBos are supporting this evolution to improve the interoperability and the safety of the Rail system.

Next step should be the completion of the specifications for Track circuit and its “promotion” to Interoperability Constituent.



Ready for TSI CCS 2022

The incoming TSI CCS 2022 will pose new challenges that NoBos are ready to face with Manufacturers, IMs, RUs and EUAR:

- **Single set of specification and the migration from previous BLs.**
- **Modularity and related integration aspects.**
- **ATO and its integration with ERTMS/ETCS**
- **Cyber-security as a key challenge also in the next future certifications**
- **FRMCS, a multi carrier telecommunication system will require a new approach to its certification to guarantee a consistent QoS level for ERTMS/ETCS needs.**

You can find more information on:

<http://ertmsaccreditedlabs.eu/>

<http://nb-rail.eu/>

Thank you very much!
Goodbye and take care of you!
Looking forward to meet all of you!

