

Signal

The ERTMS Newsletter

Summary

Top Story – Role of ERA as ERTMS system authority

Did you know... – Enforcing ERTMS conformity

In the spotlight – Interview with ERA Executive Director Josef Doppelbauer

Breaking News – High interest for ERTMS in the CEF 1st call

Contact Details

Top Story

The role of the European Railway Agency (ERA) as ERTMS system authority

ERA's role as ERTMS System Authority is to act as the guardian of the ERTMS specifications, through which the compatibility of rail infrastructure installations and that of the corresponding train on-board units are to be ensured.

Two aspects of this role are essential for the successful establishment of ERTMS as the principal train control system on Europe's rail network. First of all, the strategic roadmap for ERTMS specifications has to be defined by stable, clear, and reliable specifications. Secondly, an effective change management process has to be enforced that provides early error detection and enables the capacity to install new features when needed.

The Agency has started a fair and transparent process by which the knowledge and feedback from the rail sector is taken into account. The new ERTMS stakeholder platform enables business leaders and decision-makers, who would truly like to impact and support cross-border rail operations and ERTMS deployment, to be part of the future strategy process of ERTMS implementation in Europe.

The increased focus on the follow-up of ERTMS technical deployment will be twofold:

- Technical follow up of EU funded projects, facilitated by the synergy with the Deployment Management Team and by the coordination with the European Commission and INEA;
- The take up of responsibilities in pre-authorisation for ERTMS trackside and authorisation for international ERTMS on-board systems within the 4th Railway Package.

ERA seeks to enforce a strong ERTMS version management and a strengthened system authority role to prevent any future diversification of the single European train control and command system by optimizing the coordination of the ERTMS technical development and deployment. In addition, the Agency will increase its role to monitor that the ERTMS projects, implemented by Member States, are in line with the specifications. This will ensure a single transparent, stable, affordable, and interoperable ERTMS system throughout Europe.

Did you know...

ERTMS Compatibility

... that running trains everywhere in Europe – one of the key principles of the Breakthrough program – requires the following technical compatibility of ERTMS to be achieved:

- ▶ Fully compliant ERTMS on-board systems

On-board

Specification scope B3-R2

(restrictions)

- ▶ Operated on ERTMS trackside equipment without add-ons

Trackside

ETCS Function

Specification scope 2.3.0d and onwards

Sources: ERA – ERTMS compatibility (2015)

In the spotlight: ERA Executive Director Josef Doppelbauer



Watch the full video interview with ERA Executive Director Josef Doppelbauer on the ERA website: www.era.europe.eu.

Dr. Doppelbauer has been part of the railway industry for 25 years. He gained significant experience in key aspects of railway technology, including signalling and communications and controls. Since the early 1990's, he has been involved with the development of ERTMS. As newly appointed Executive Director of ERA as of 1 January 2015, he is now one of the key stakeholders in the ERTMS deployment process. Therefore, we went to visit Dr. Doppelbauer in Valenciennes (France), where he shared his vision on ERTMS deployment with us.



Josef Doppelbauer,
Executive Director ERA

ERTMS has and will be deployed in a wide variety of networks and rolling stock throughout the Core Network. Could you please give us some more insights on the basic principles upon which the ERTMS system is based and how it can be applied in this wide variety of networks?

The European Rail Traffic Management System (ERTMS) currently consists of two major components:

- The Radio System GSM-R
- The European Train Control System ETCS

ETCS has both an impact on the technical and strategic level:

On the technical side, ETCS is a Train Protection System that supervises the speed of a train in order to ensure safety. ETCS is based on the principle of "Movement Authority": the ERTMS on-board unit on the train compares the actual speed with the permitted speed at any given time. If the former is higher, first a warning is issued, followed by the brakes being activated to reach a safe state if needed. All information is displayed to the driver in the cab: permitted speed, target distance, actual speed, etc. The Movement Authority can be transmitted to the train by radio.

On the strategic side, ETCS has been designed to introduce interoperability into the European rail network. Interoperability in two senses of the word: (1) technical interoperability for differing train control systems when going by train from one member state to another and (2) systemic interoperability in the sense that you should be able to buy trackside equipment from one manufacturer to run a train fitted with equipment of another.

ERTMS is based on joint specifications in the Technical Specification for Interoperability (TSI) for "Control-Command and Signalling" (CCS). It is a flexible system in a way that it can be applied both as add-on (or overlay) to an existing network (that would be ERTMS level 1) or as unique system to be installed in case of new radio-based infrastructure (that would be ERTMS level 2). The latter has the advantage that trains can reach higher speeds thanks to the improved cab signalling. With this radio-based train communication technology, capacity on existing European routes can be considerably increased with comparatively little effort.

Deployment is now the focus of the European Coordinator for ERTMS and the European Commission. What is the role of ERA in this program?

We support the initiative of the European Coordinator Karel Vinck wherever we can. As ERTMS System Authority, ERA seeks to continuously improve the Governance of ERTMS so that we can jointly work on solutions to our current problems. We have seen that enforcement of decisions across the sector can be a challenge, especially when key actors are not aligned.

The main role of the Agency is to act as the guardian of the ERTMS specifications. It must be ensured that infrastructure is only being deployed with compatible installations and that on-board units are fully compatible with the ERTMS specifications.

Could you please explain the role of ERA as ERTMS system authority?

First of all, ERA is in charge of managing the evolution of the ERTMS specifications. This has two components: (1) the strategic roadmap for ERTMS specifications and (2) the change management process, when either errors are detected or new features are desired.

In order to get the commercial benefits out of ERTMS, strict compliance with the specifications must be ensured across Europe and backward compatibility must be guaranteed for every new upgrade to the specification.

ERA is working on the ERTMS specifications Roadmap. How do you intend to proceed?

We have started a fair and transparent process by which we integrate the knowledge and feedback provided by sector organizations. Now we expect all involved actors to put Europe first, also by understanding that a European system will be beneficial for everyone! The European supply industry needs to commit to the full implement the ERTMS specifications without any national add-ons. We, as European Railway Agency, will make sure that those specifications are stable, clear, and reliable.

We look forward to an interoperable future for train control in Europe with ERTMS as the principal train control system.

Breaking news

High interest for the priority area ERTMS in the CEF 1st call

The Commission's record 13.1 billion euro investment plan (2014-2020) for the transport sector is coming closer to reality, after the EU Member States approved the list of projects to receive funding under the Connecting Europe Facility (CEF).

The main objective of the CEF instrument for the transport sector, as set out by the TEN-T Guidelines, is to help complete the TEN-T Core Network and its Corridors by 2030. ERTMS Deployment has been assigned as one of the funding priority areas under the CEF. In that regard, the Commission has never experienced such a high oversubscription. The funding allocated to ERTMS under the CEF 1st call was 200 million euro from the general envelop and 100 million euro from the Cohesion envelop. The significant amount of requested co-funding can be interpreted as a political success of ERTMS, since it is a clear sign for the final establishment of this technology in the European railways.

Sources: European Commission (2015) and INEA (2015)

Belgian railway network to receive ETCS Level 2

Infrabel, the Belgian railway infrastructure operator, has awarded a 510 million euro contract to the consortium Siemens and Cofely-Fabricom (GDF Suez) to install its rail network with ETCS (European Train Control System) Level 2. The contract is a final step in the accelerated deployment of the ETCS Masterplan by Infrabel. The project is scheduled for completion by the end of 2022 and should cover a total of 2.200 kilometres of track with ETCS.

The ETCS Level 2 uses the railway-specific GSM-R mobile radio system to ensure a permanent two-way radio connection between the vehicle and trackside. It further ensures continuous speed control and automatic braking when needed, which enhances both the network safety and capacity.

Sources: Infrabel (2015) and VRT News (2015)

Adif awards GALICIA ERTMS contract

Spanish infrastructure manager Adif has awarded a consortium of Alstom, CAF and Siemens a 63 million euro contract to install ERTMS on the recently-opened Atlantic Corridor in Galicia.

This contract will extend ERTMS coverage to the entire Galicia high-speed network. ERTMS will allow train operator Renfe to improve operational safety and raise the maximum commercial speed on the Vigo - A Coruña line to 220km/h.

Sources: International Rail Journal (2015)

Contact details



For further information on ERTMS, please visit our website:
ec.europa.eu/transport/modes/rail/ertms



Get in contact with our Deployment Management team via [MOVE-ERTMS-DEPLOYMENT\(at\)ec\(dot\)europa\(dot\)eu](mailto:MOVE-ERTMS-DEPLOYMENT(at)ec(dot)europa(dot)eu).

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