



ERTMS Deployment/Migration Strategies of ERTMS Users Group members

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Content

- ERTMS Users Group (EUG)
- Deployment/Migration strategies
- Next steps.

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EUG Mission

To help the railways in applying ERTMS/ETCS in a harmonised and interoperable way, to enable the free flow of trains and a competitive railway

The added value of the ERTMS Users Group is to offer a platform for railway peers to share experiences and to consolidate their views.

11 EUG Members

All EUG members deal with substantial ERTMS investments (> € 250 million) in their network;

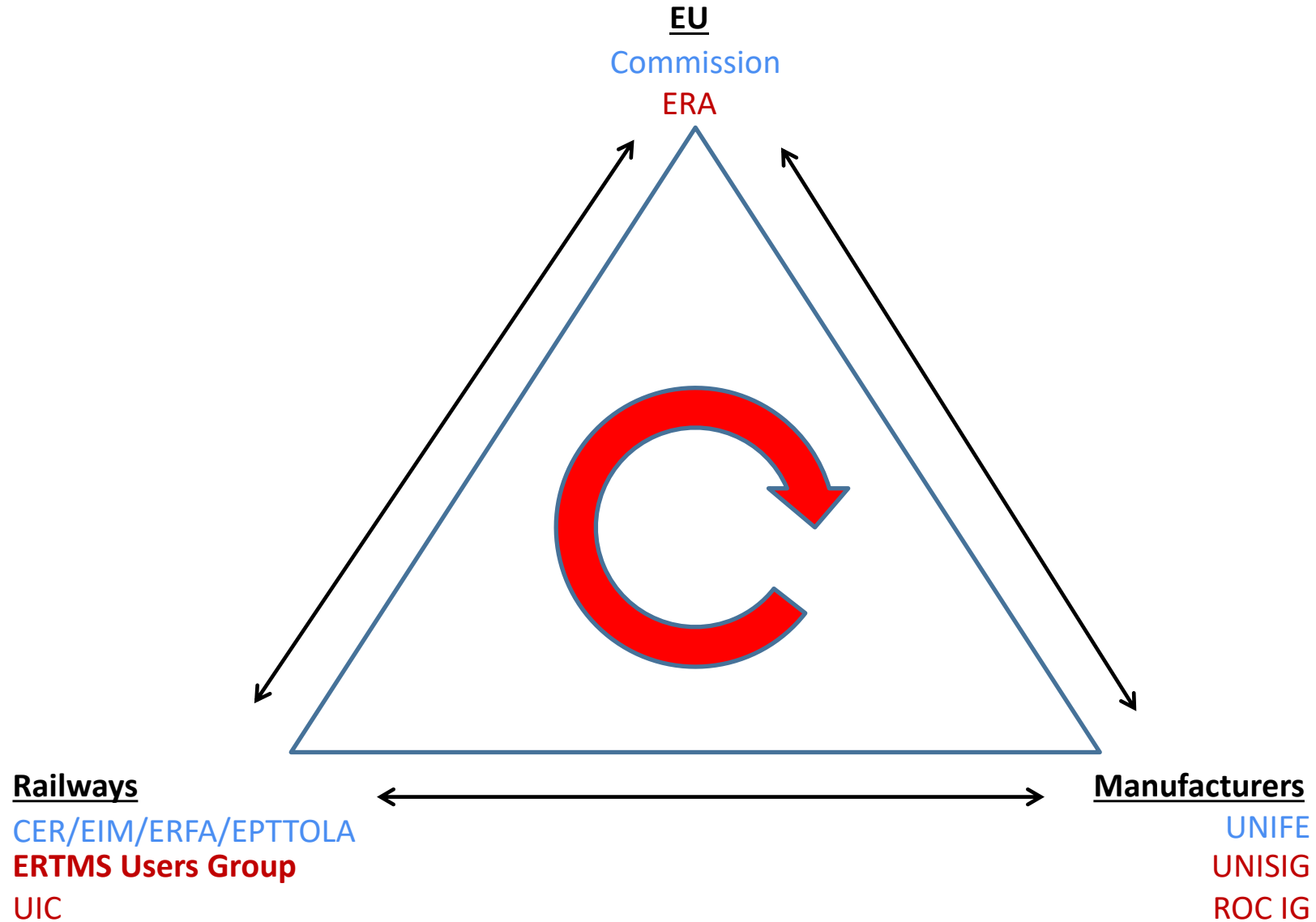


Also connecting with Railway Undertakings on practical issues

RU ERTMS/ETCS Platform

- Railway Undertaking ERTMS/ETCS platform set up in 2013
- Aim: to share ERTMS/ETCS experiences and ideas
- Discussed are the relevant and practical issues concerning specification, design, certification, installation, authorisation, performance, reliability, operation, tendering and maintenance of ETCS On-Board Units in rolling stock
- Participants:
 - DB Fernverkehr, DB Cargo, MRCE, NS, ÖBB, SBB, SNCB, SNCF, Trenitalia (substantial (potential) ERTMS investments, > € 50 million)
 - RDG, CER, ERFA, EPTTOLA, UIC
 - Other stakeholders (suppliers, ERA, EC, NSA's, NoBo's, laboratories) are invited.

Role and level



TSI CCS Evolution/Clarifications

ERA * UNISIG * EEIG ERTMS USERS GROUP

ERTMS/ETCS

**System Requirements Specification
Chapter 3
Principles**

REF : SUBSET-026-3
ISSUE : 3.6.0
DATE : 13/05/2016

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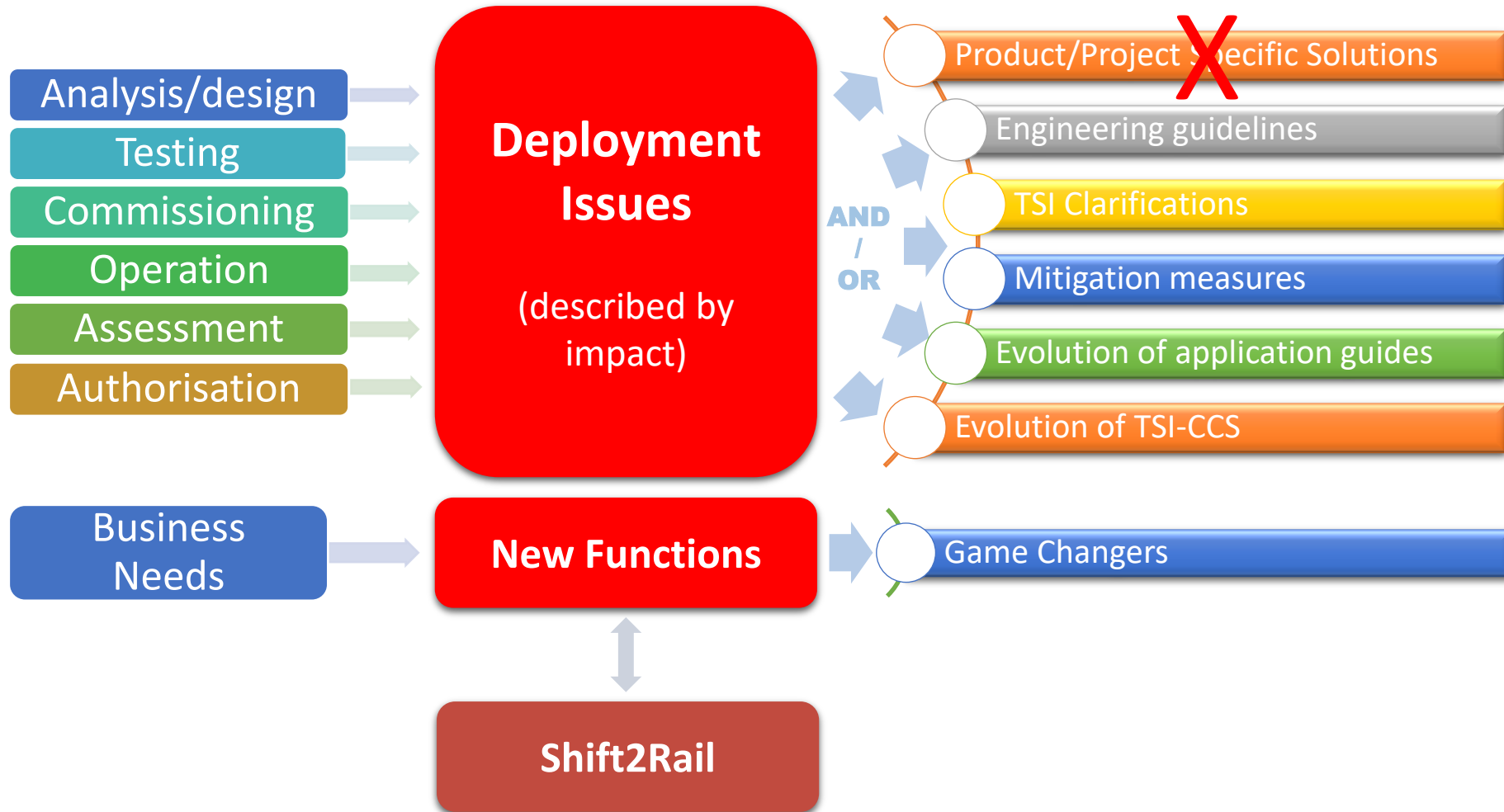
ERTMS/ETCS

**Baseline Compatibility Assessment
Baseline 3 Release 2
Final Report**

REF : ERA_BCA_B3R2
ISSUE : 1.1.0
DATE : 13/05/2016

And many more...

EUG's Activities



Business needs

- Costs reduction (both on investment and operational costs)
- Improved Reliability, Availability, Maintainability and Safety
- Interoperability
- Improved capacity:
 - Automatic Train Operation
 - Level 3
 - Improvement of braking curves
- Replacement of obsolete technology
 - Alternative for GSM-R.

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Migration strategies (1)

- Some countries have decided for **full scale deployment of ERTMS** on their network **within their shortest period of time**:
 - Switzerland (2017)
 - Belgium (2022)
 - Denmark (2023)
 - The Netherlands (2028, larger part, first phase)
 - Norway (2030)
 - Sweden (2035)
- Migration in Denmark, The Netherlands and Norway is **‘ERTMS only’** i.e. only ERTMS equipped trains can run on the (ERTMS) network
- Migration in Switzerland allows existing fleet to run on large parts of the network with the traditional class B system
- Migration in Belgium allows this until 2025.

Migration strategies (2)

- Gradual replacement is foreseen in:
 - Germany; now studying integrated case for coming 20 years
 - United Kingdom
 - France
 - Spain
 - Italy
- Focus in Germany, France, Spain and Italy on EU Core Network Corridors and High Speed
- Main application levels are now L2 and L1LS; Level 3 being studied and first pilots emerging.

Migration strategies (4)

European deployment strategy:

- Deployment of ERTMS on **Core Network** by 2030
 - Focus on 9 Core Network Corridors by means of Connecting Europe Facility (CEF)
 - Mainly for rail freight
 - 50% done before 2023
- Deployment of ERTMS on **Comprehensive Network** by 2050
- **Compliant Baseline 3 onboards** can safely run on **any compliant ERTMS line** with an acceptable level of performance.

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Next Steps

Driven by business needs:

- Application of / Migration to Level 3
- Getting Automatic Train Operation, GoA2 and GoA4
- Use of Satellite positioning (virtual balises)
- Finding successor to GSM-R / GPRS
- Having Improved Braking Curves
- Having Improved IT-Security.

Thank you for your attention

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