THE EUROPEAN RAIL TRAFFIC MANAGEMENT SYSTEM (ERTMS) PROJECT OF THE EUROPEAN RAILWAY AGENCY (ERA)

Note by the European Railway Agency (ERA)
ERTMS

the role of the European Railway Agency

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Historically, the development of signalling and communication systems was driven at national level: today there are over 20 signalling and speed control systems operating in Europe today, incompatible with each other.

The Thalys high-speed train, which connects Paris, Brussels, Cologne and Amsterdam, is equipped with no less than seven different systems, including specific sensors and control panels.
What is ERTMS?

ERTMS is a major European industrial project, started and supported by the European Commission to harmonise the control command and communication system for interoperable railways.

ERTMS (European Rail Traffic Management System) features two basic components:

GSM-R (GSM-for Railway): radio system based on standard GSM technology used to exchange information (voice and data) with trains

ETCS (European Train Control System): computer based safety system to control the speed of the trains
ERTMS can be used in different configurations based on infrastructure constraints and design.

ETCS is used on conventional railway lines and on very-high speed lines.

In the “level 2” configuration, ETCS does not require to install any trackside optical signals, reducing significantly installation and maintenance costs.
There are currently more than 17,000 km of track and 3,500 vehicles already in service or contracted with ERTMS in Europe.

Worldwide, there are more than 30,000 km of ERTMS lines in service or contracted.

*) Source: UNIFE
67 % of the European Railway network will be covered by GSM-R

Mobile Users:

Plan: 337 483
Today: 120 088

25 889 Cab radios
Railway Interoperability Directives are « new approach » directives.

Interoperability Directives add a «layer»: Technical Specifications for Interoperability (TSIs).

ERTMS specifications (~100 documents) are referenced in Annex A of the TSI CCS.

Change Control Management for the ETCS and the GSM-R by ERA:

- to maintain the current version
- to develop the future releases
The current version of the ETCS specifications (known as “2.3.0d”) is enforced by Commission Decision 2008/386 of 23/4/2008.

Additional functions for broader application scope have been defined for the next ETCS version “Baseline 3”.

The ETCS Baseline 3 will ensure backward compatibility with infrastructure in service with current version.
Signed 4th July by Commission and sector organisations to accelerate deployment of ERTMS in Europe. ERA not part of it, but requested to meet aggressive deadlines for development of ETCS Baseline 3 specifications.

Final objective: ETCS Baseline 3 in 2012.
September 08: publication of all new functions defined for the Baseline 3

November: detailed project plan for Baseline 3 development: to be endorsed by sector in ERTMS MoU

December: first draft SRS 3.0.0, to be presented to MS in Interoperability and Safety Committee

2009/10: consolidation, preparation of test environment

2011: validation and test; feedback from operation

mid 2012 Recommendation for EC Decision
Maintenance of current baseline 7/15:
- critical review of Optional Functions
- Feedback from National Safety Authorities
- close coordination with Cross Acceptance activities (Notified National Technical Rules)

Development of System Version Management for the next baseline 8/16
Revision started in 2008 to ensure ERTMS system properly integrated in Control Command and Signalling

Review of the present Open Points for their resolution

Editorial review of the TSIs text

Chapter 7 of TSI CCS defines the EU Master Plan for the deployment of ERTMS:

• proposal of DG-TREN under discussion
ERTMS success rests on:
- technical and operational interoperability
- harmonised acceptance in the Member States
- common approach to test and acceptance

National Safety Authorities play central role:
- authorising the bringing into service of the structural subsystems
- supervising that the interoperability constituents comply with the essential requirements