ERTMS: European specifications
European authorisation

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Warszawa, 27 maja 2010
ERTMS is a major European industrial project, started and supported by the European Commission

**EU Political support:**
nomination of the European Coordinator for ERTMS

**EU Financial support:**
hundred M€ for initial development;
500 M€ reserved in the TEN2007-13 (260 in the ongoing second call); up to 50%; Rolling Stock costs eligible

**EU Legal Framework:**
HS railway system: obligation to install in case of new construction, renewal or upgrade
CR system: obligations in the European Deployment Plan
the ERTMS Memorandum of Understanding

Signed 4/7/2008 by Commission and Sector Organisations, defines:

ETCS “2.3.0d” as the stable reference for EU deployment

Time plan to develop Baseline 3 by 2012

The backward compatibility principles

ERA not part of the MoU, but requested to meet aggressive deadlines for development of ETCS specifications
ETCS – planned and managed evolution

2012 - Baseline 3: additional functions for wider applications:
- Limited Supervision
- Level Crossings
- Improved Shunting and Start of Mission

The trains with ETCS Baseline 3 will be compatible with infrastructure in service with current version.
Change Control Management

current ERTMS version and new one will co-exist

strategic balancing:

protection of investments

evolution of ERTMS

Evolution of enabling technology for operational improvements and opportunities for efficiency, but interoperability investments must be protected
Railway Interoperability Directives like « new approach » directives

with the added « layer »: Technical Specifications for Interoperability

The European Railway Agency is responsible for the technical specifications
ERTMS specifications (nearly 100 documents) are listed in the TSI CCS Annex A

The Operational Rules for ERTMS referenced in TSI CCS and TSI OPE

Documents not translated – “English” version only

They are available for download on the ERA website
Today in commercial service in Europe:

3000 km of lines
1300 vehicles

Worldwide, there are more than 30,000 km of ETCS lines in service or contracted *

*) Source: UNIFE
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ERTMS in Central and Eastern Europe

Today 47000 km in 5 Member States
120000 mobile terminals

with: two suppliers for infrastructure
a fragmented market for cab-radios

Worldwide applications in Asia, Africa and Australia
The European Deployment Plan

Adopted 22.7.2009 by Commission Decision

Ensures gradual access for ERTMS trains to more lines, ports, terminals and marshalling yards without the need for national equipment.

Total deployment over 24 000 km of ETCS, two deadlines:

• 2015 substantial parts of six freights corridors (totalling over 9 000 km)

• 2020, the corridors fully equipped (another 5500 km) and a number of key freight hubs (approx. 10 000 km)
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.
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ERTMS in Central and Eastern Europe
Technical specifications are mature. Operational harmonisation in progress.

In 2007 the ERA study investigated differences in ERTMS authorisation processes in: Italy, Austria, Spain, The Netherlands, Belgium, France, Germany.

**Authorisation is a Cost Driver:**
- Locomotive: 5m€ ?
- ETCS (onboard): 1,5m€ ?
the interoperability directive

transparency and efficiency

art 15: “procedure for placing in service”:

- Member States shall ensure that subsystems are placed in service only if they meet the essential requirements of the Directive
- EC declaration of verification automatically means meeting the essential requirements
- National Rules only where:  
  - open point  
  - derogation  
  - specific case
the interoperability directive

no “homologation”

authorisation for placing in service subsystems and vehicles

art 16: “free movement of subsystems”

Member States cannot require tests already carried out in the process for EC verification:

automatic acceptance of ERMTS tests in laboratories
art. 22: authorisation of TSI conform vehicles (EC verification):

the criteria checked by a NSA may concern only:
• safe integration of onboard subsystems;
• technical compatibility vehicle-track;
• national rules for open points

No safety case for each vehicle – network!

Technical compatibility covered by ERTMS specs
Authorisation and Operation

The process

TSI checked by NoBo

Open Points checked by Designated Body

Technical Compatibility

Safe Integration

Provisions and processes of SMS

Authorisation to place in service

Management and operation

Design operating state

System integration
A much greater role for governments via NSA:
- authorisation
- defining and publishing national rules for the meeting of the essential requirements (until the entire system conforms to TSIs)

A defined role for the IMs and RUs
- no more “self regulation”
- authorisation by NSA
- “equal status” RUs and IMs – neither sets rules for the other or authorises the others assets
- separately responsible for safety to be demonstrated to NSA

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ERTMS in Central and Eastern Europe
a clear target – progressive implementation

Where TSI have open points or specific cases, MS must use notified national technical rules

Transparency – fair treatment: rules must be published and made available to IM, RU, and applicants “in clear language that can be understood” (art 17)

Agency task to analyse and classify the technical rules - DataBase
ERTMS MoU signed in 2008:

Art 33 “Testing procedures are a fundamental factor to successfully implement ERTMS”
Art 36: Criteria for reference Laboratories - approved 2009, published on ERA website, based on accreditation

Consultation Paper DV 17 from the Commission: collect input from Member States, sector and Notified Bodies – strengthen process and responsibilities
ERTMS test specifications

ETCS test reference - framework contract

“provision of ETCS testing support activities and related services”

awarded to a consortium of laboratories and NoBo

Framework contract valid for 3 years, max envelope 1,5 M €

to procure: concurrent development of test specifications in parallel with SRS consolidation

GSM-R test specifications

test cases for mobile terminal acquired from UIC
december 2009; test frame for network under discussion
ERA coordinated initiatives

- **With the Commission and stakeholders:**
  - DV 29 – common understanding of authorisation
  - EA – laboratories for ERTMS
  - ERTMS MoU Steering Committee

- **With Notified Bodies:**
  - Coordination with the ERTMS subgroup of NB Rail
  - Establishment of ad hoc WG according to the new Regulation

- **With NSAs:**
  - ERTMS Focus group established as a WG of the NSA network

- **Internal Coordination ERTMS Cross-Acceptance:**
  - Notification of National Technical Rules - a tool also for TSI
ERA website:
www.era.europa.eu

detailed Information on

Work Program
databases: safety, statistics,
specifications, ..
Job opportunities
call for tenders procurement