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The Railway Interoperability Directives

Screening

Chapter 14 – Transport Policy

Brussels, 27 June 2006

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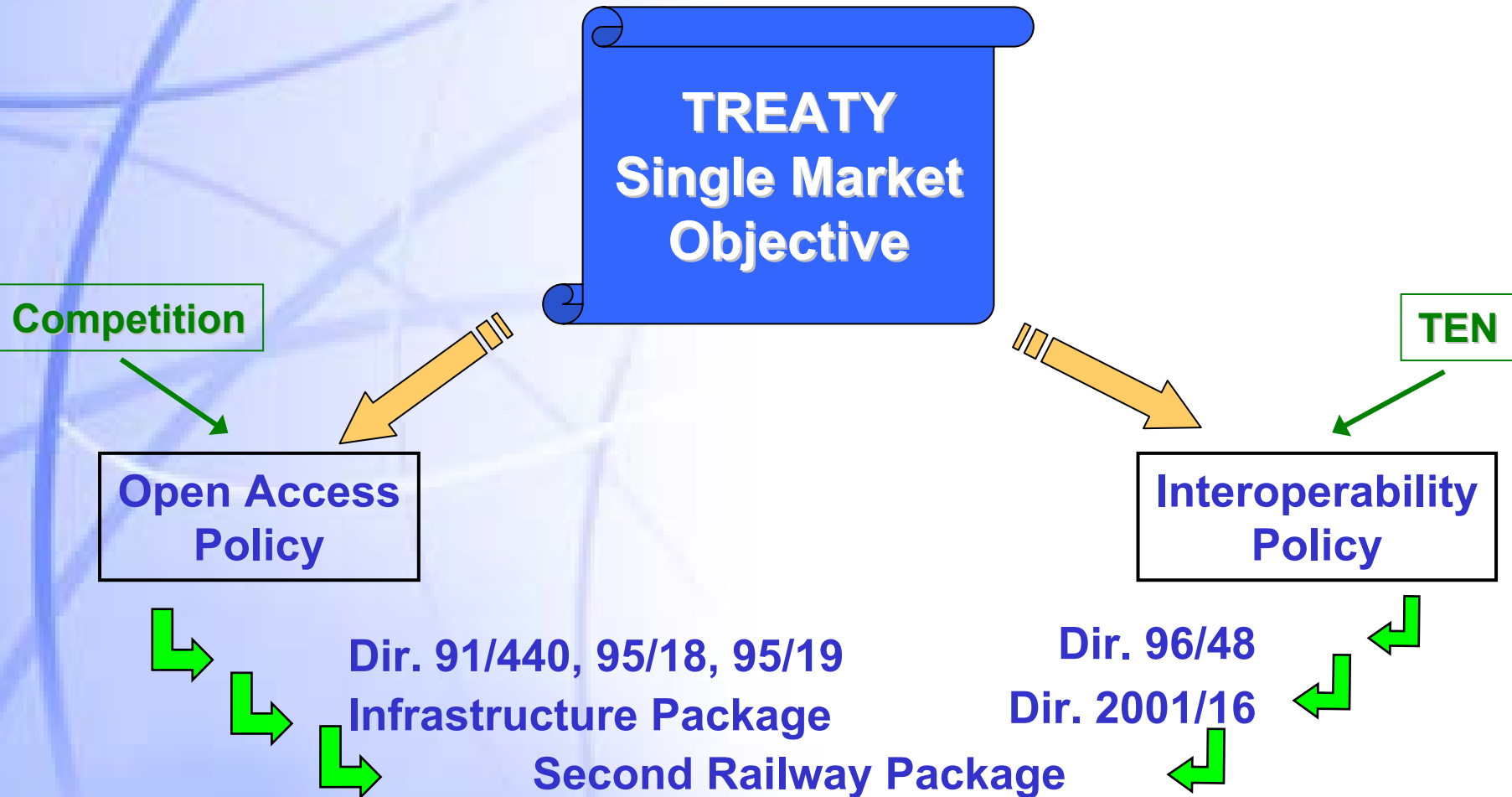
A system approach

- **Safety directive deals with system aspects**
 - ✓ Role and responsibilities of the actors, regulatory structure, safety levels and methods
- **Interoperability directives deal with subsystem aspects**
 - ✓ Rolling stock, operational rules, staff requirements, signalling, infrastructure, etc.



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Legal basis





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The interoperability Directives

- **Directive 96/48/EC of 23 July 1996 (OJ L235 of 17 September 1996)**
 - ✓ **Trans-European high-speed rail system**
- **Directive 2001/16/EC of 19 March 2001 (OJ L 110 of 20 April 2001)**
 - ✓ **Trans-European conventional rail system**



Interoperability

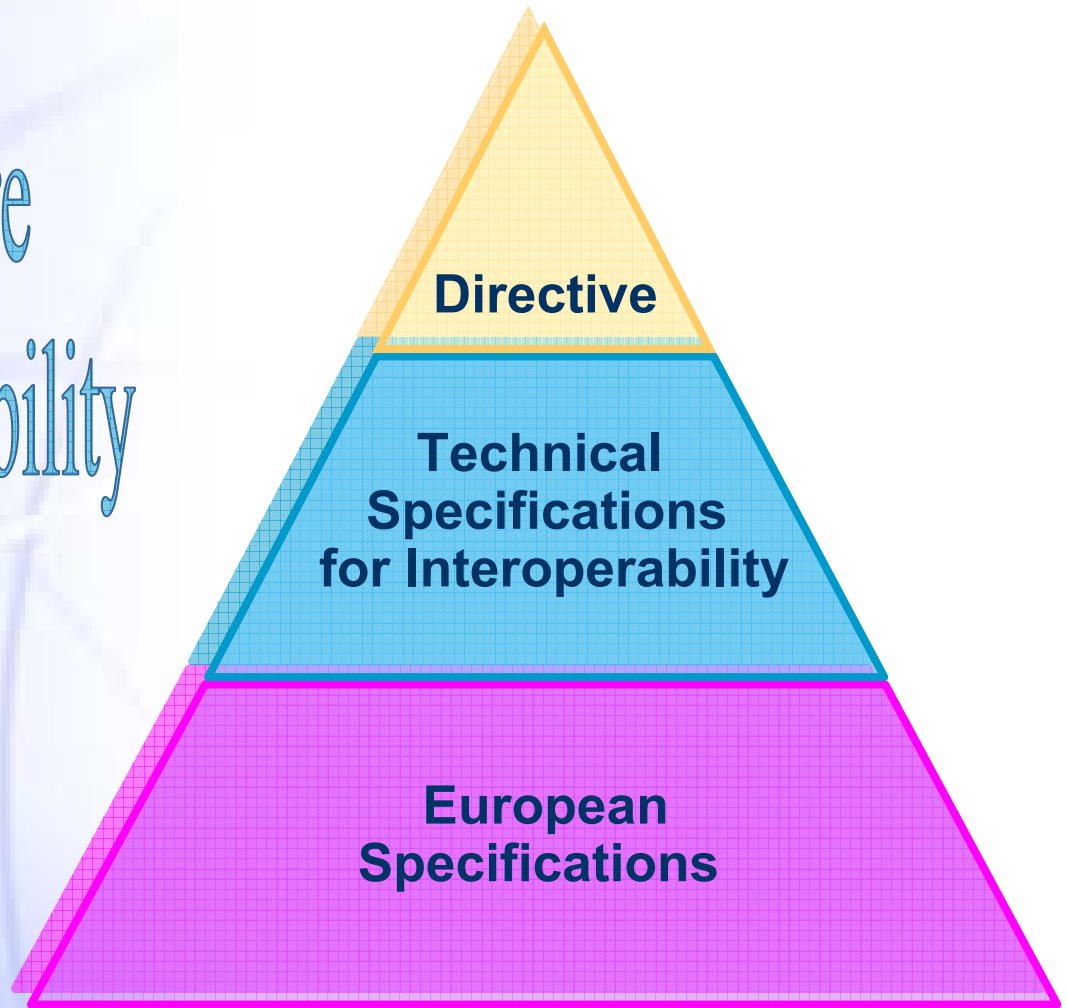
- **The ability of the trans-European rail system to allow the safe and uninterrupted movement of trains which accomplish the specified levels of performance.**
- **This ability rests on all the regulatory, technical and operational conditions which must be met in order to satisfy the essential requirements**

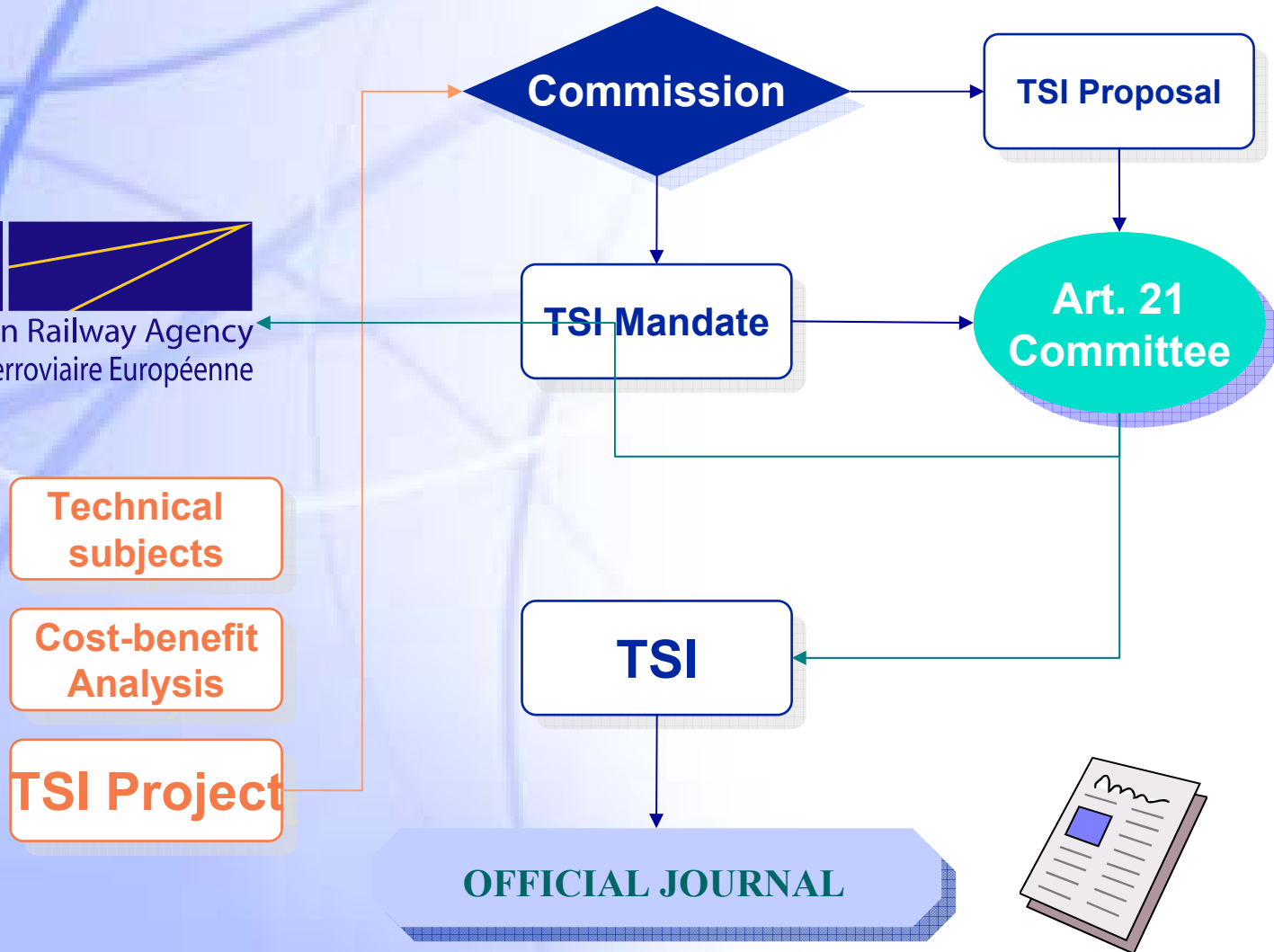


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Interoperability Directives

A layer structure
to reach interoperability







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High speed rail interoperability

State of play - 1

- TSI Commission Decisions of 30 May 2002, published on OJ L 245 of 12 September 2002 :
 - Decision 2002/730/EC - Maintenance
 - Decision 2002/731/EC - Control-Command and Signalling
 - Decision 2002/732/EC - Infrastructure
 - Decision 2002/733/EC - Energy
 - Decision 2002/734/EC - Operation
 - Decision 2002/735/EC - Rolling Stock
- Their 1st revision has received a favorable opinion by the Rail Interoperability Committee on 21 June 2006



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High speed rail interoperability

State of play - 2

- Notified Bodies : coordination
- Mandate to CEN/CENELEC/ETSI in 1999: adoption of 100 standards by 2005 (more than 60 standards already available) (30 still pending on RST)
- National law implementation: 15/15 done + acquis for the others
- TSI Implementation Guide published in three languages and available on Europa site



Conventional Rail Interoperability

- **Decision 2004/446/EC of 29 April 2004 (OJ L155 of 30 April 2004)**
 - ✓ Basic parameters of four TSIs of the first TSIs group (Noise, Freight Wagons, Telematic Applications for Freight, Operations and Traffic Management)
- **Decision 2004/447/EC of 29 April 2004 (OJ L155 of 30 April 2004)**
 - ✓ Basic parameters of a fifth TSI of the first TSIs group (Control-Command and Signalling)



Conventional Rail Interoperability

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First group of CR TSIs :

- Telematics applications for freight services (**Regulation 62/2006/EC of 23.12.2005, OJ L13 of 18.01.2006**)
- Noise (infrastructure and rolling stock) (**Decision 2006/66/EC of 23.12.2005, OJ L37 of 08.02.2006**)
- Control-Command and Signalling (**Decision adopted and notified by the Commission on 28.03.2006, doc. C(964)Final, publication on the OJ in August 2006**)
- Freight wagons (**likely to be adopted by July 2006**)
- Traffic operation and management (incl. Staff qualifications) (**likely to be adopted by July 2006**)



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Conventional Rail Interoperability

Second group of CR TSIs:

- Safety of railway tunnels (**Adoption expected by end 2006**)
- Accessibility to persons with reduced mobility (**Adoption expected by end 2006**)



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Conventional Rail Interoperability

Third group of CR TSIs to be adopted by 2007-2008 (mandated to the European Railway Agency):

- **Infrastructure**
- **Rolling Stock**
 - **Locomotives & Traction Units**
 - **Passenger Coaches**
- **Energy**
- **Telematics for passengers**



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The Second Railway Package

➤ Directive 2004/50/EC of 29 April 2004 (OJ L164 of 30 April 2004)

Modifies Directives 96/48/EC and 2001/16/EC:

- ➔ Updates the provisions of these two directives in line with the directive on safety and the role of the new agency
- ➔ States the principle of interoperability for the whole railway system, to be implemented progressively as of 2008. This shall be based on a program established according to cost/benefit analysis
- ➔ Aligns the two directives



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Impact for Member States

Directives 96/48/EC and 2001/16/EC (as modified by Directive 2004/50/EC)

- **Article 6: notification of the list of associations and bodies to be consulted during the drafting of the TSIs**
- **Article 7: notification of the intentions to derogate to the provisions of one or more TSIs**
- **Article 8: verification on placing on the market of the interoperability constituents + market surveillance**
- **Article 14: authorisation of placing into service a subsystem + numbering of rolling stock**
- **Article 16(3): notification of the standards and technical specifications by 30 April 2005**
- **Article 20: notification of the Notified Bodies**
- **Article 22 (96/48/EC) or Article 24 (2001/16/EC): publication and annual update of infrastructure and of rolling stock registers**
- **Article 23 (96/48/EC): implementation in national law by 13 February 1999 (96/48/EC)**
- **Article 26 (2001/16/EC): implementation in national law by 20 April 2003**



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Impact for Member States

Technical Specifications for Interoperability (TSIs)

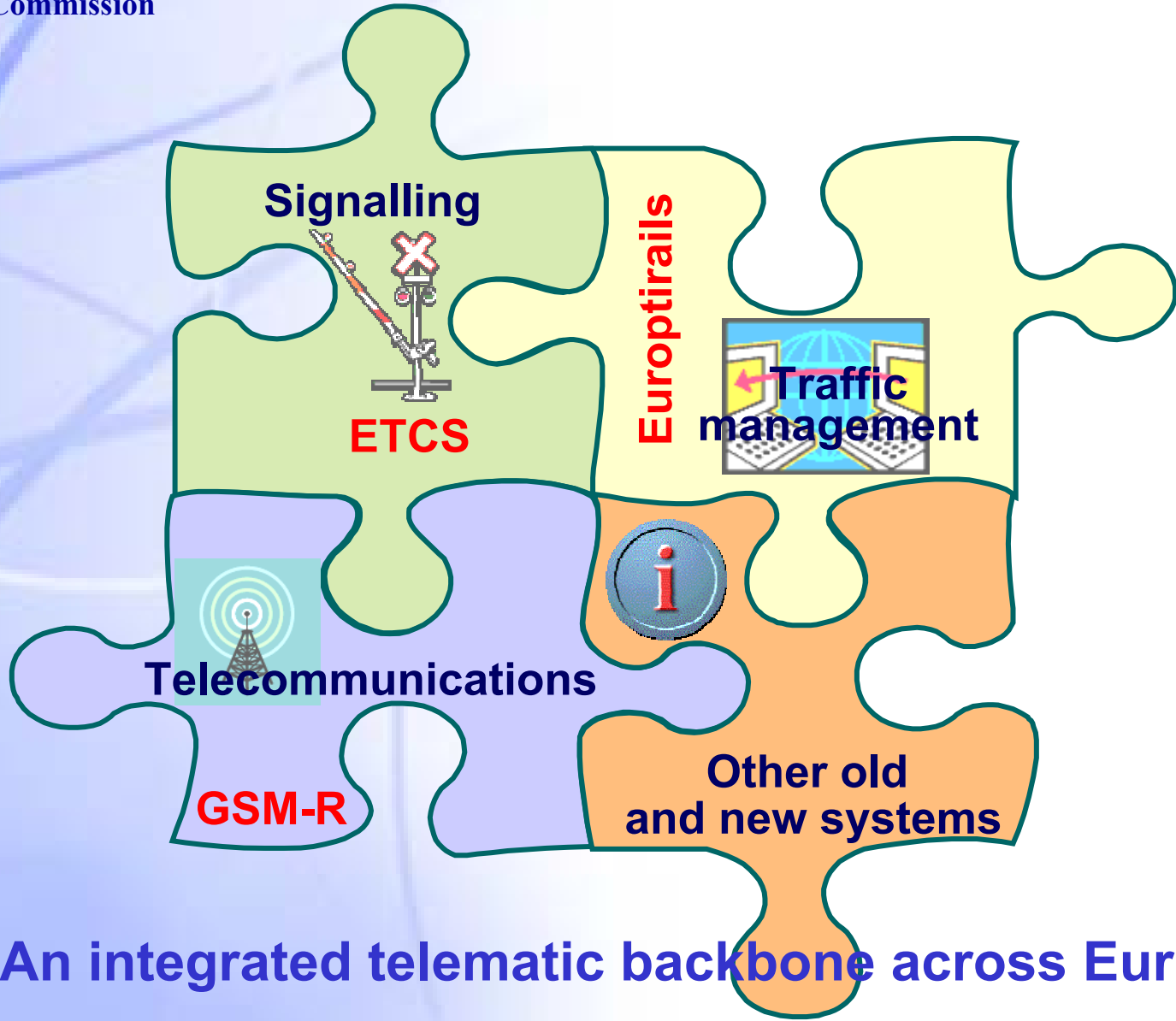
Notification of:

- ❖ The list of the applicable technical rules
- ❖ The conformity assessment and checking procedures to be applied with regard to the application of these rules
- ❖ The bodies appointed by the Member State for carrying out those conformity-assessment and checking procedures
- ❖ The same as the three items above for the national « specific cases »
- ❖ The projects / subsystems / interoperability constituents still falling under the previous version of the TSI, in case of revision of the TSI
- ❖ Various types of national, bilateral or multilateral agreements concluded between Member States and / or Railway Undertakings / Infrastructure Managers
- ❖ For some TSIs (example: Control-Command and Signalling, Operations & Traffic Management): National implementation plans



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ERTMS – eyeshot



An integrated telematic backbone across Europe



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What is ERTMS?

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

- GSM-R: Radio system used to exchange information (voice and data) between trackside and on-board
- ETCS (European Train Control System): the computer based European system control the train speed

Future control command system for interoperable railways:

- Today: Level 1 and 2
- Long term: Level 3 and connection with Galileo



ERTMS is important for:

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- Improved interoperability: lowers the barrier created by national signalling and safety systems
- Reduced risk of train accidents
- Better and safer working conditions for train drivers
- Possibility for further infrastructure capacity increase
- Equipping new infrastructure lines and trains and rehabilitating existing ones by advanced and cost effective technology
- Increased capability to generate information for all stakeholders, in particular for customers



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ERTMS is available

- ERTMS is a fully developed and tested system, available on the market – several suppliers
- ERTMS specifications are stabilised – future evolution under the responsibility of ERA
- ERTMS is already in commercial use in several parts of the European network and its large scale deployment has started



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Migrating towards ERTMS

Migration is the biggest challenge for all parties involved: Member States, infrastructure managers, railway undertakings, manufacturers

Use a coherent approach with all stakeholders to speed it up:

- Define an integrated migration programme with Member States
- Get active support for project and execution from infrastructure managers and railway undertakings on basis of business plans
- Structure the adequate financing resources

Full benefits of ERTMS only become visible with reaching critical mass

EU Financial support is critical



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Migrating towards ERTMS

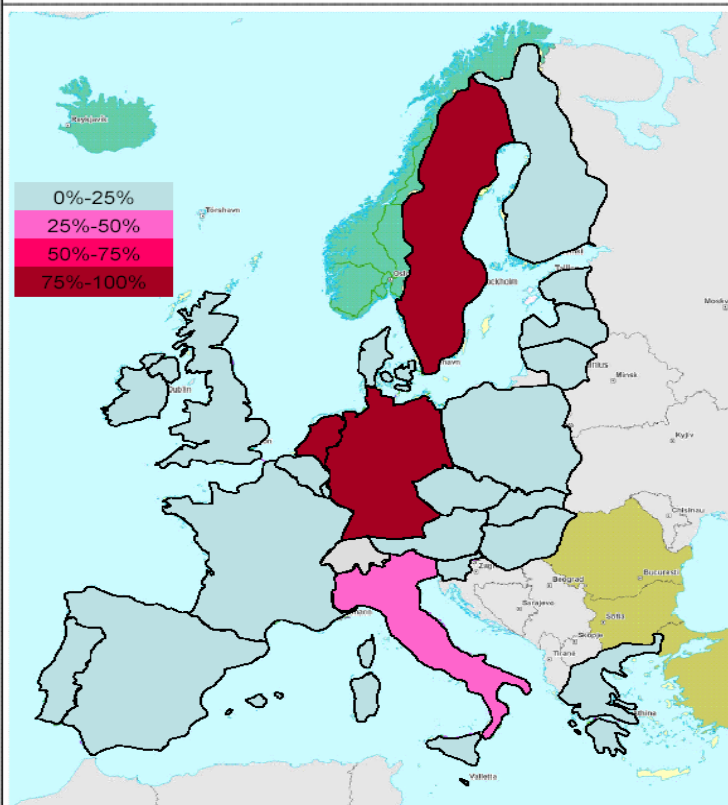
- **High speed lines:**
 - New: obligatory
 - Existing: cross-border as first priority
- **Freight:**
 - Implementation on major freight corridors
 - Necessity to include hubs, terminals and accesses
- **New Member States:**
 - Renewal or upgrading of railway network
- **Entire network scheduled in some countries**
 - Medium-size networks



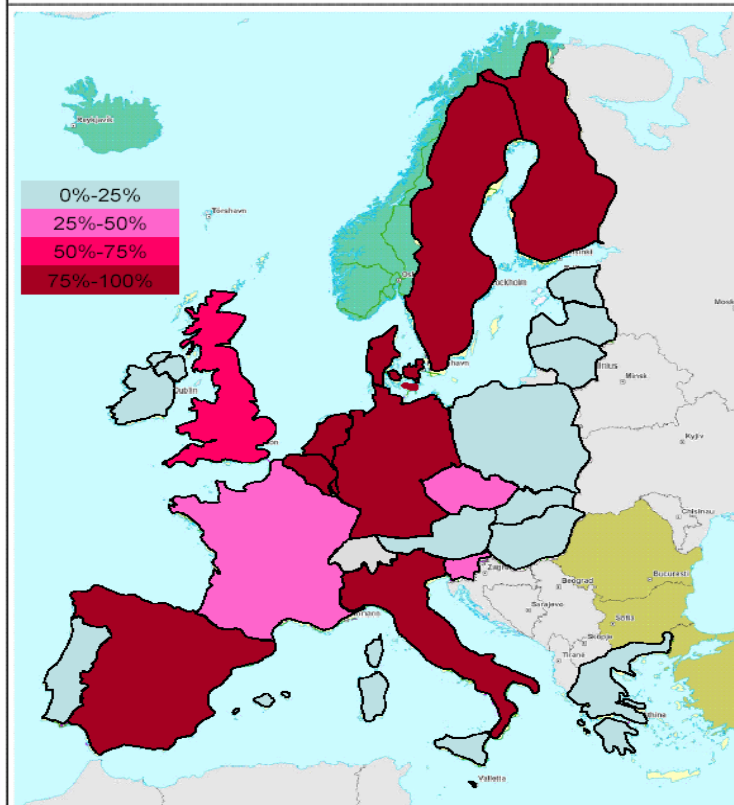
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GSM-R deployment in EU-25

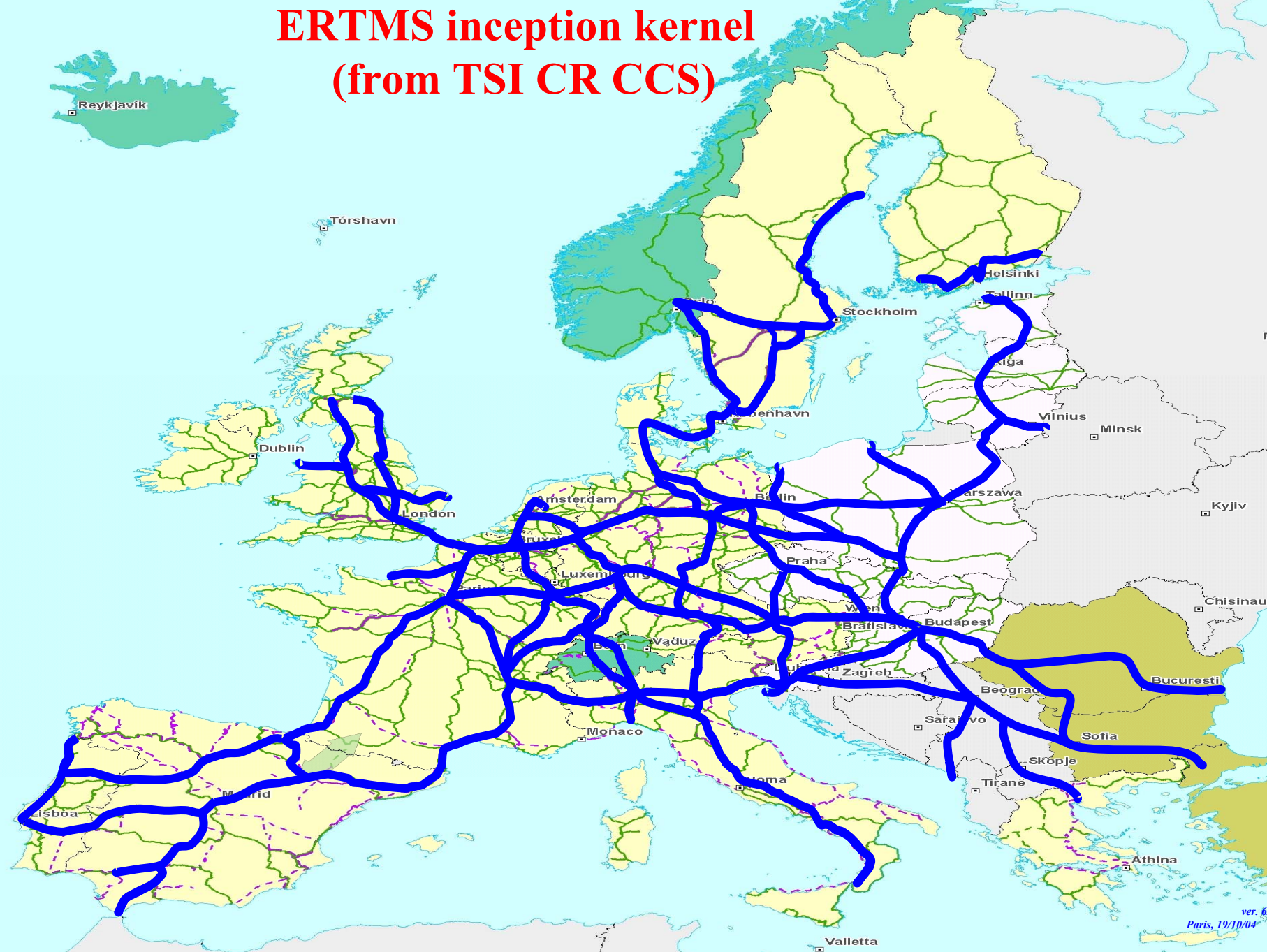
EU-25: Percentage of main lines equipped with GSM-R mid-2005



EU-25: Percentage of main lines equipped with GSM-R at the end of 2008



ERTMS inception kernel (from TSI CR CCS)





ETCS – Eyeshot on implementation

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Oresund-Stockholm-
Nyland 2015
Botnia Line 2009

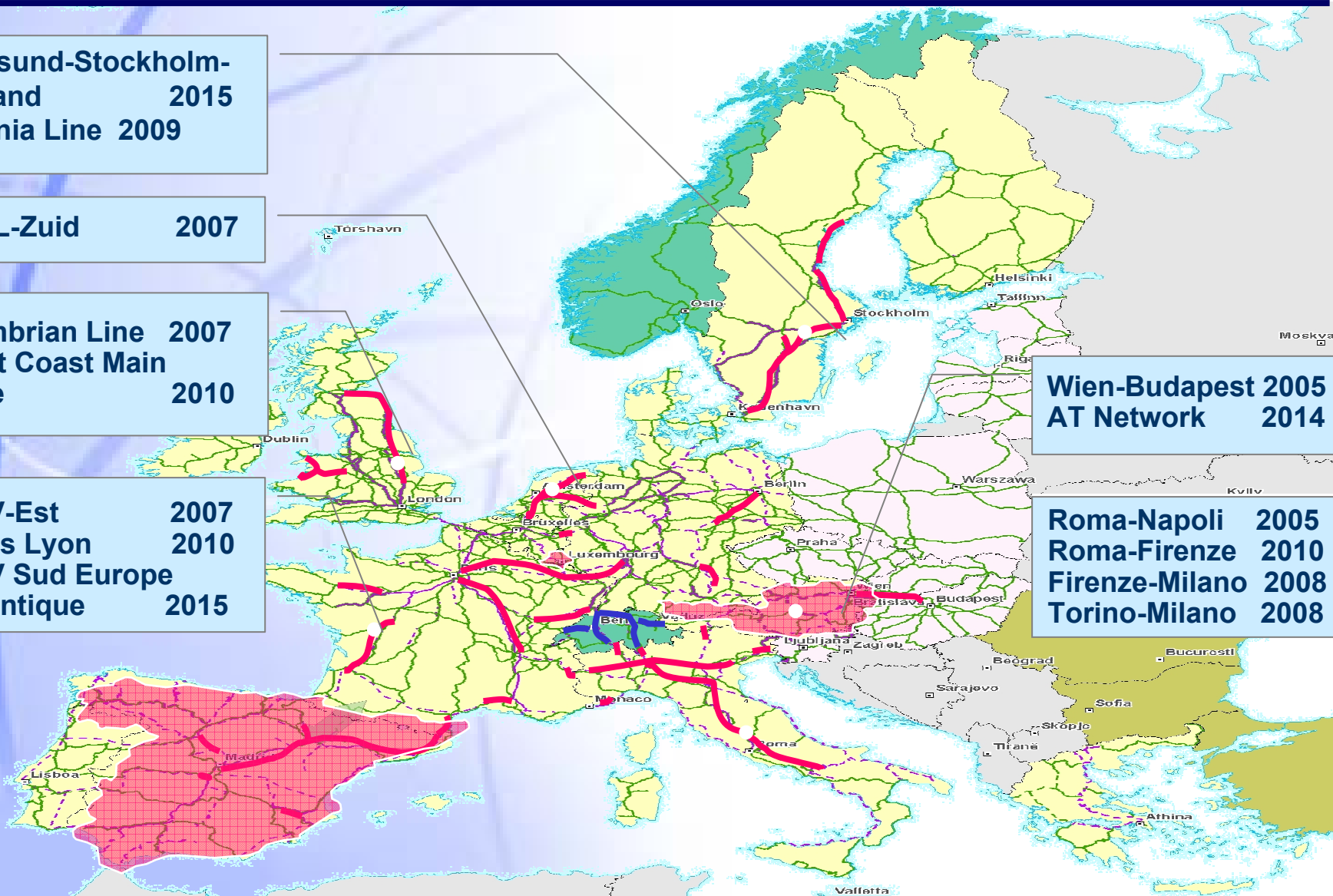
HSL-Zuid 2007

Cambrian Line 2007
East Coast Main
Line 2010

TGV-Est 2007
Paris Lyon 2010
LGV Sud Europe
Atlantique 2015

Wien-Budapest 2005
AT Network 2014

Roma-Napoli 2005
Roma-Firenze 2010
Firenze-Milano 2008
Torino-Milano 2008





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Thank you for your attention !

