Directorate-General for Energy and Transport

EUROPEAN COMMISSION

European Rail Traffic Management System

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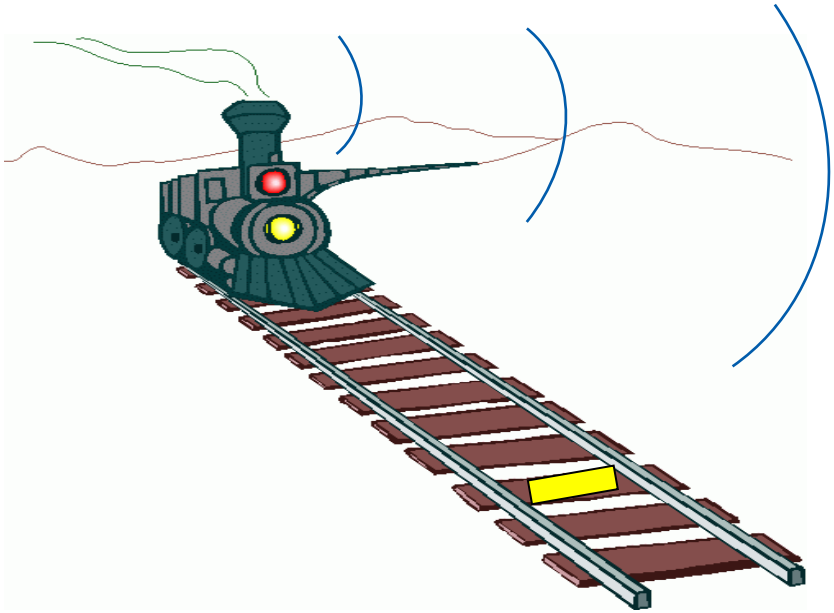
European Coordinator

What is ERTMS? (1)

GSM-R

A radio system similar to GSM (but with specific frequencies) for **voice** and **data exchange** between driver and central control.



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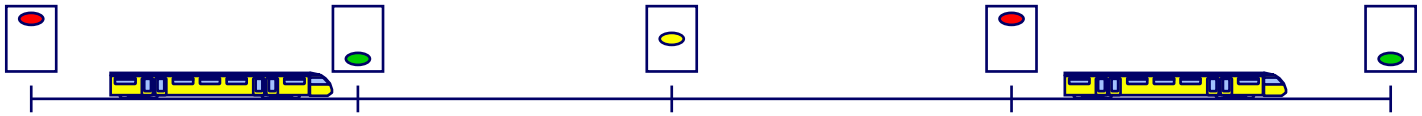
What is ERTMS? (2)

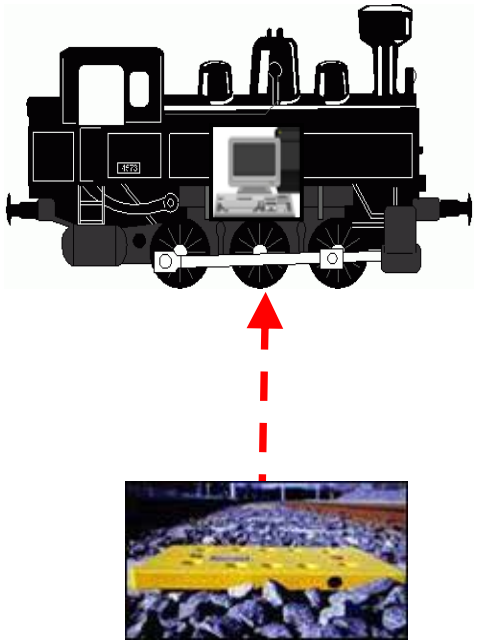
ETCS - Train Control System



- Ensures adequate **safety margin** between trains
- Increases **line capacity**

How ?

- **Speed limits** are transmitted from track to train
- **Driver's screen** shows permitted maximum speed
- On-board computer **stops the train** if the speed limit is exceeded.



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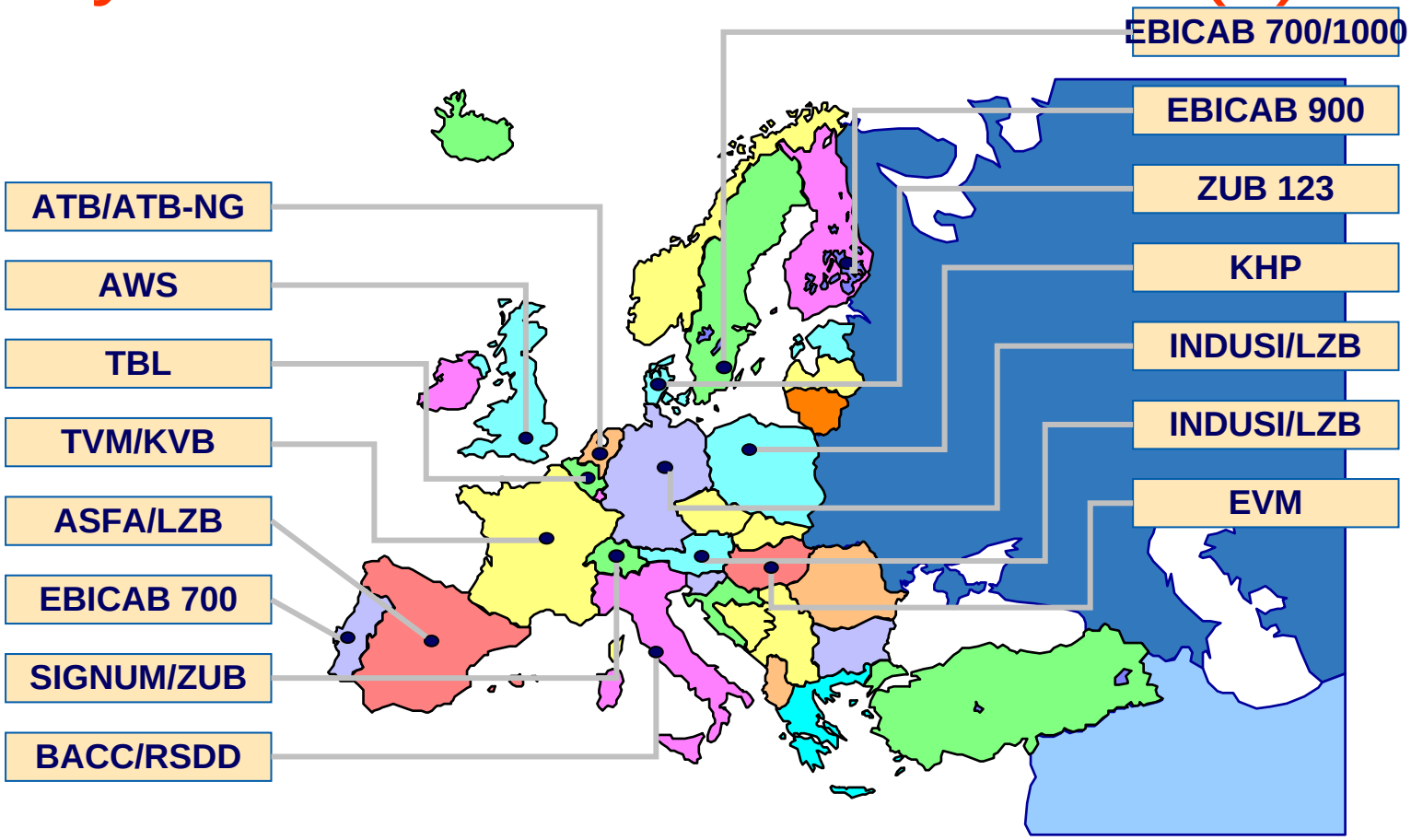
Why an EU action on ERTMS? (1)



- Over 20 different **speed control** systems
- and 17 **train radio** systems

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Why an EU action on ERTMS? (2)

In the Thalys cab:
7 signalling systems side-by-side

Capital cost : +70%

Maintenance cost : +35%

Availability rate : -50%

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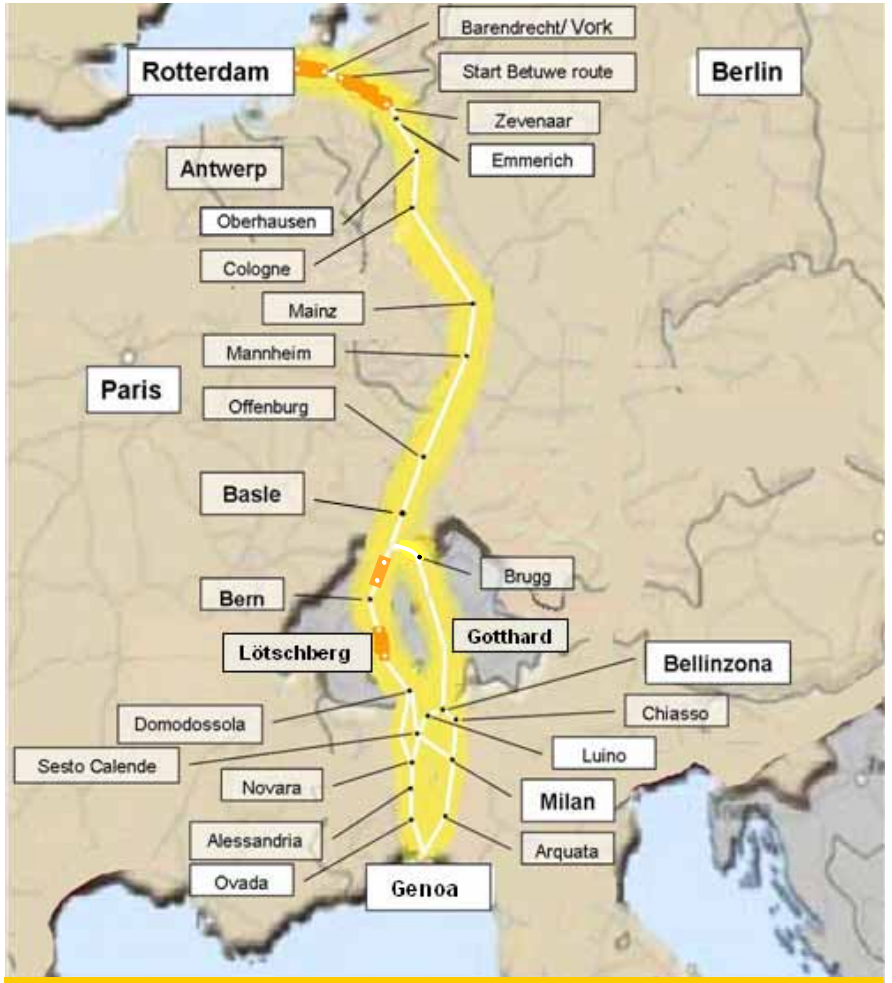
Why an EU action on ERTMS? (3)

Can the freight sector deal with "Thalys-like" solutions?

- ➔ Costs
- ➔ Delays
- ➔ Technical impossibilities



ERTMS Freight Corridor A : Rotterdam Genoa

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ERTMS: what is the situation today?

- Over **2000 km in service** (freight, passenger, mixed traffic; high speed, conventional) in Europe
- **High satisfaction** of users (performance, ergonomic aspects for drivers)
- **Interoperability** between different manufacturers achieved in the framework of different projects.
- BUT…
  - » technical incompatibilities **between projects** still exist
  - » some **manufacturers** perform better than others

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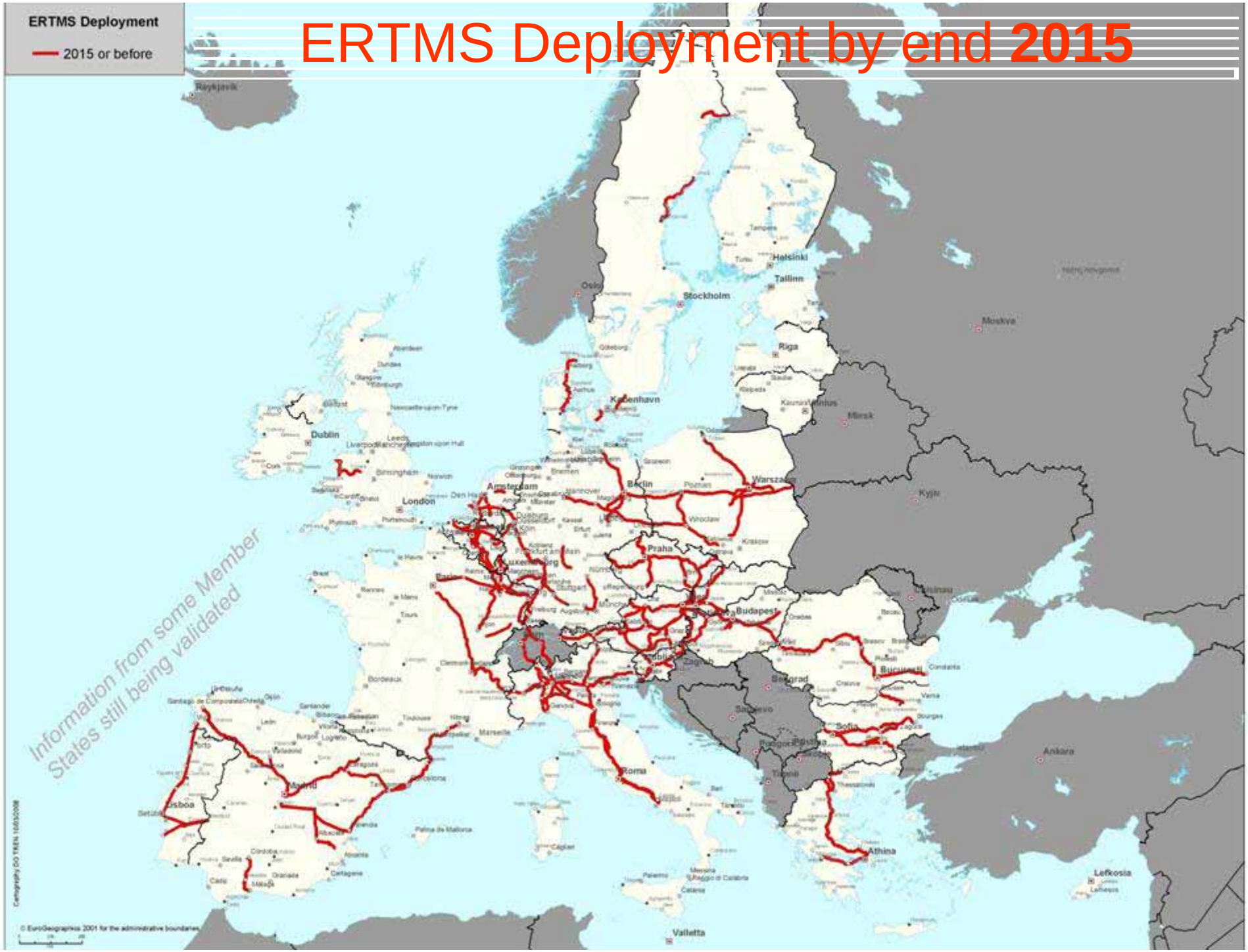
Lines in revenue service at end **2007**

ERTMS Deployment by end **2015**



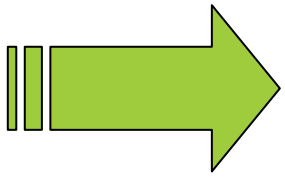
Deployment outside Europe

	Route / Locomotive	Vehicles	Route length (km)
Australia	Penrith-Glenbrook	-	14,5
	Wentworth Falls-Katoomba	-	11
	Meldow Bath-Mt Victoria	-	15,5
China	Beijing - Tianjin	-	117
	Shijiazhuang - Taiyuan	-	190
	Vehicle equipment	60	-
Taiwan	Total network	768	1.200
India	Delhi-Agra	35	100
	Madras-Gummudipundi	84	30
Mexico	Mexico City	20	35
Saudi-Arabia	Damman - Riyadh	15	449
South Korea	Gyeongbu - Honam	413	758
	EMU 700 Vehicles	43	-
Turkey	Ankara - Istanbul	10	250
TOTAL			**3.170**

The drivers to the deployment of ERTMS

So far two main drivers :

- **Obsolete national systems that need to be replaced.**
- **New high speed lines**



Reaching interoperability along corridors = third driver

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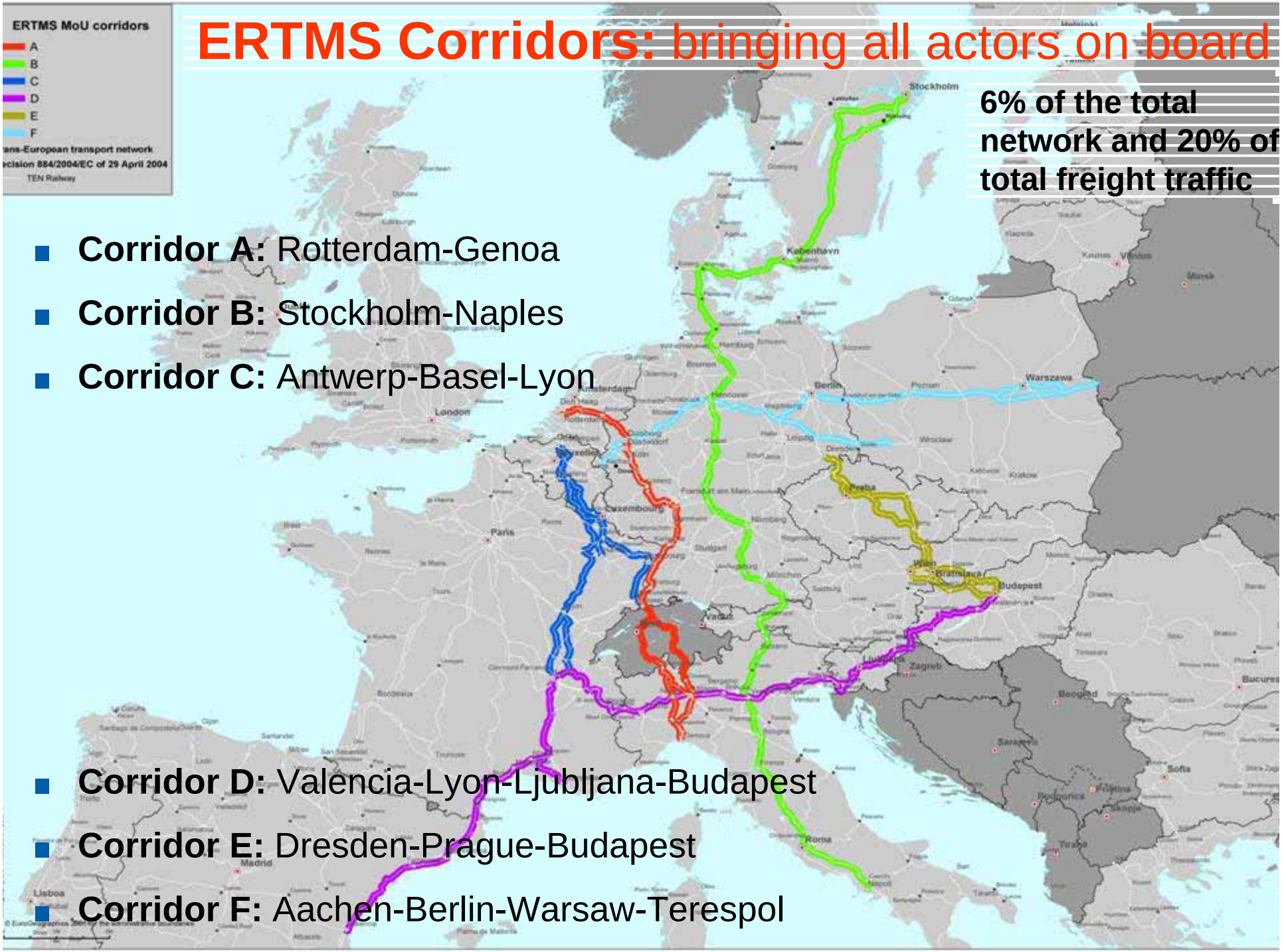
ERTMS Corridors: bringing all actors on board

6% of the total network and 20% of total freight traffic



- **Corridor A:** Rotterdam-Genoa
- **Corridor B:** Stockholm-Naples
- **Corridor C:** Antwerp-Basel-Lyon
- **Corridor D:** Valencia-Lyon-Ljubljana-Budapest
- **Corridor E:** Dresden-Prague-Budapest
- **Corridor F:** Aachen-Berlin-Warsaw-Terespol

ERTMS Corridors

Ensuring the **coordination** of activities at an early stage

Reaping the **benefits** of interoperability earlier

Increasing **capacity** and **competitiveness**

Three types of measures :

- Eliminating infrastructure bottlenecks
- Deploying ERTMS
- Harmonising operational rules

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Organisation of Corridors

- Executive Committee
  - » Representatives of Ministries + attendance of IM
  - » Interface between Corridor management and Member States
- Management Committee
  - » Representatives of IM
  - » Following tasks:
    - Business Plan + its implementation
    - Proposals to optimise Corridor
- Absolute need for permanent Working group composed of the Management Committee and the RU representatives
- Legal structure of corridor organisation: EEIG

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ERTMS Corridor Objectives

Corridor A : Rotterdam-Genoa

☑ double the **volume** transported by 2020

☑ increase **punctuality** by 26%

☑ reduce transport **time** by 20%

Result: 28 billion freight tonne-km by rail instead of by road each year (equivalent to one lorry with 26 tonnes of freight passing each point on the 1.300 km corridor every 37 seconds, 24 hours a day, all year round).

Corridor C : Antwerp-Lyon/Basle

☑ increase **volume** transported by 55% by 2020

☑ reduce transport **time** by 15%

☑ four-fold reduction in number of **late trains** (Antwerp-Lyon)

Result: 7 billion freight tonne-km by rail instead of by road each year (saving 140 million euros per year (in emissions, accidents, road congestion, etc.)

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