



Directorate-General
for Energy
and Transport



EUROPEAN
COMMISSION

- European Rail Traffic Management System

21.08.2008 – Bern

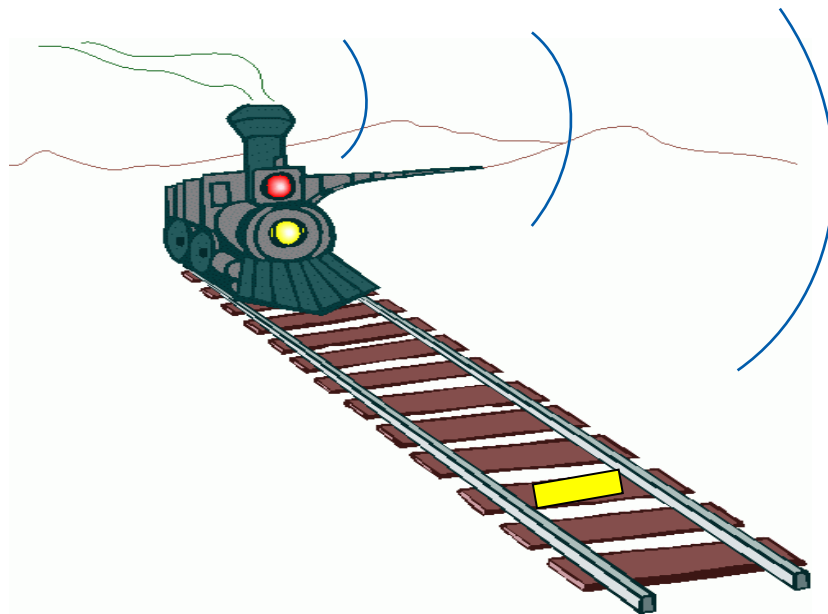
Karel Vinck

European Coordinator

● What is ERTMS? (1)

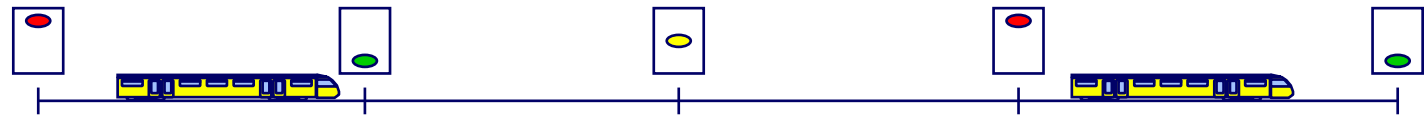
GSM-R

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



● What is ERTMS? (2)

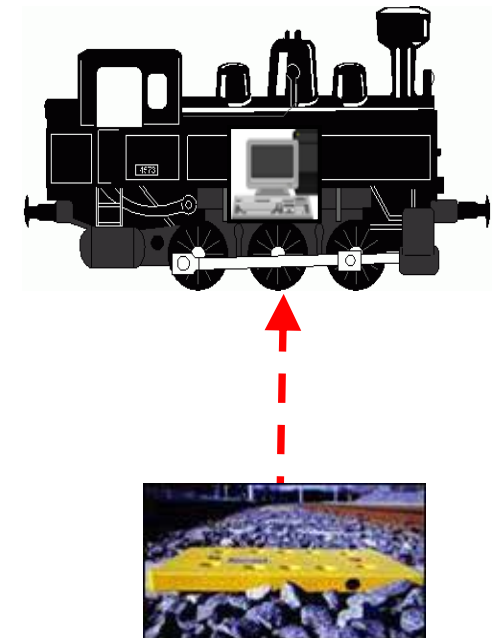
ETCS - Train Control System



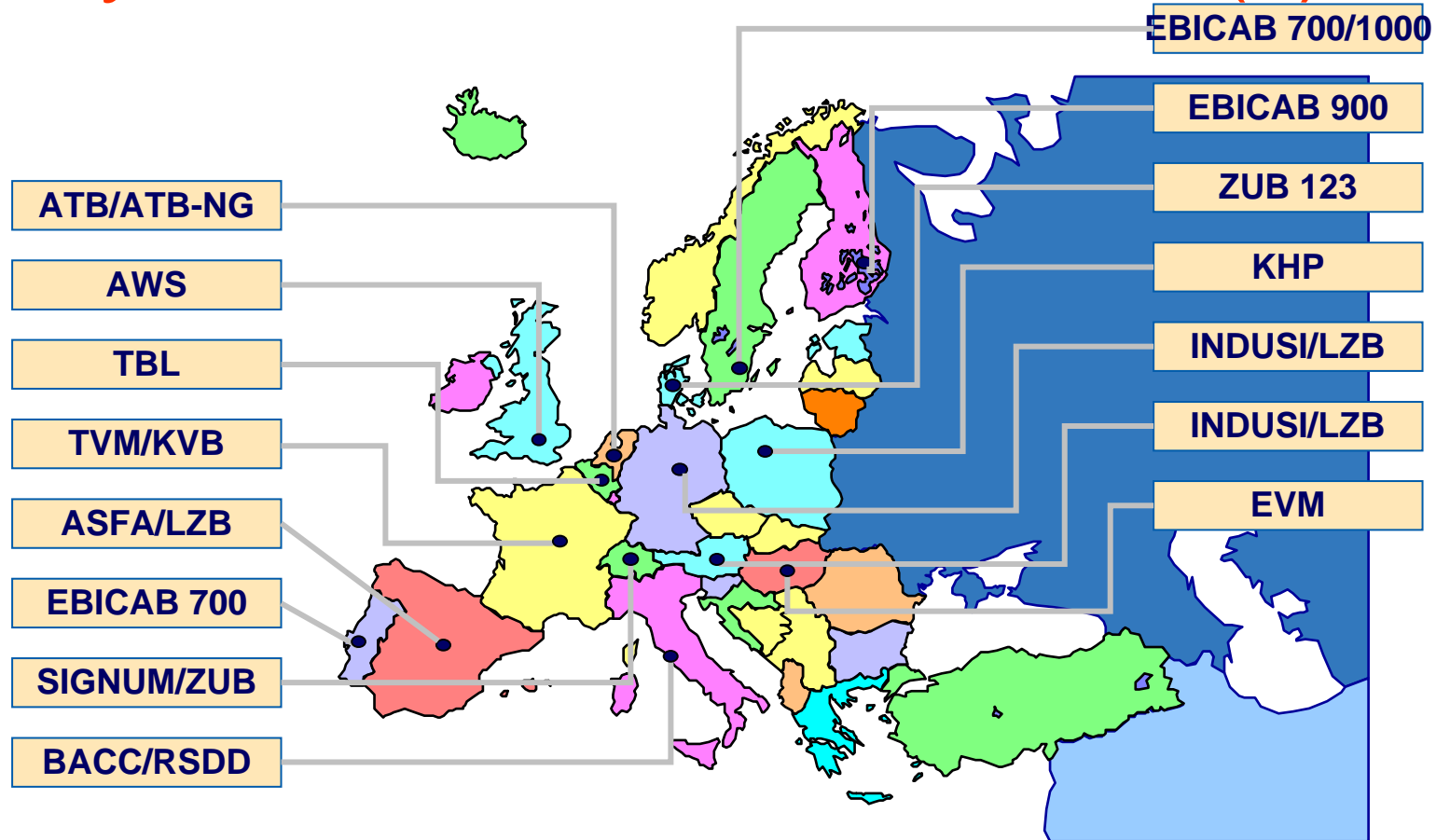
- Ensures adequate **safety margin** between trains
- Increases **line capacity**

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.



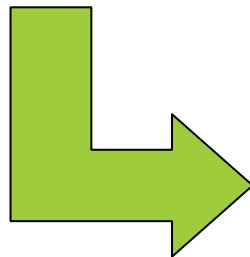
Why an EU action on ERTMS? (1)



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

● Why an EU action on ERTMS? (2)

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



Capital cost : **+70%**

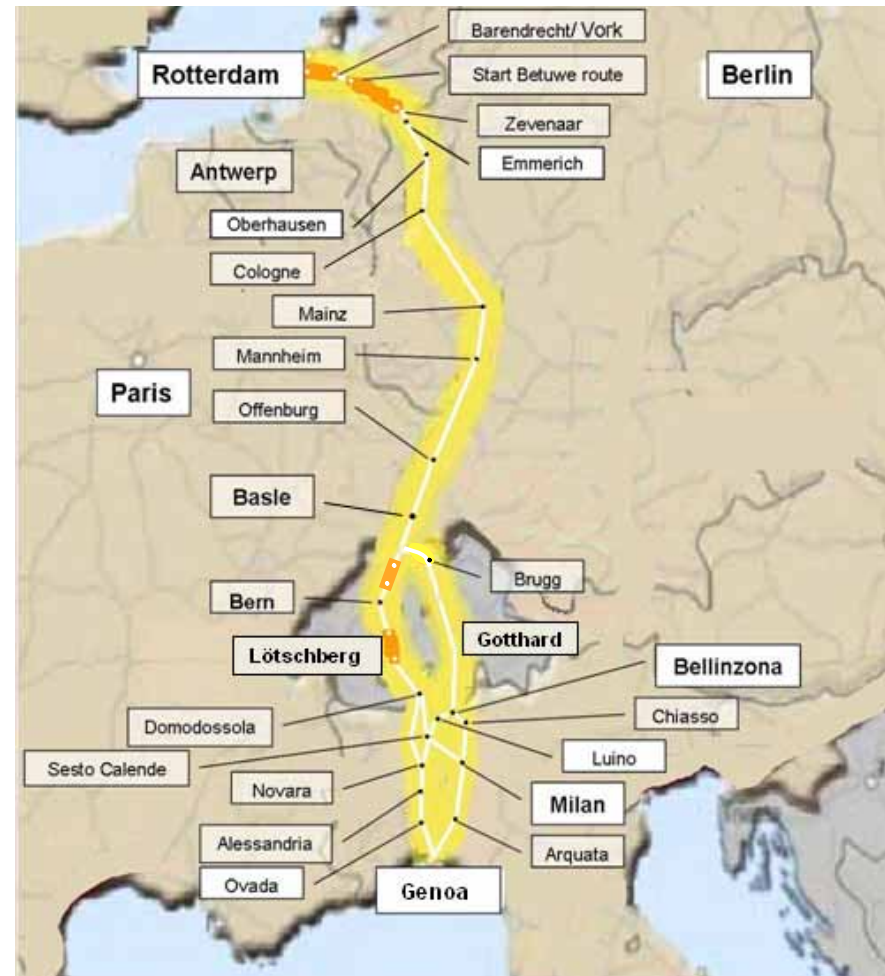
Maintenance cost : **+35%**

Availability rate : **-50%**

● Why an EU action on ERTMS? (3)

Can the freight sector deal with “Thalys-like” solutions?

- Costs
- Delays
- Technical impossibilities



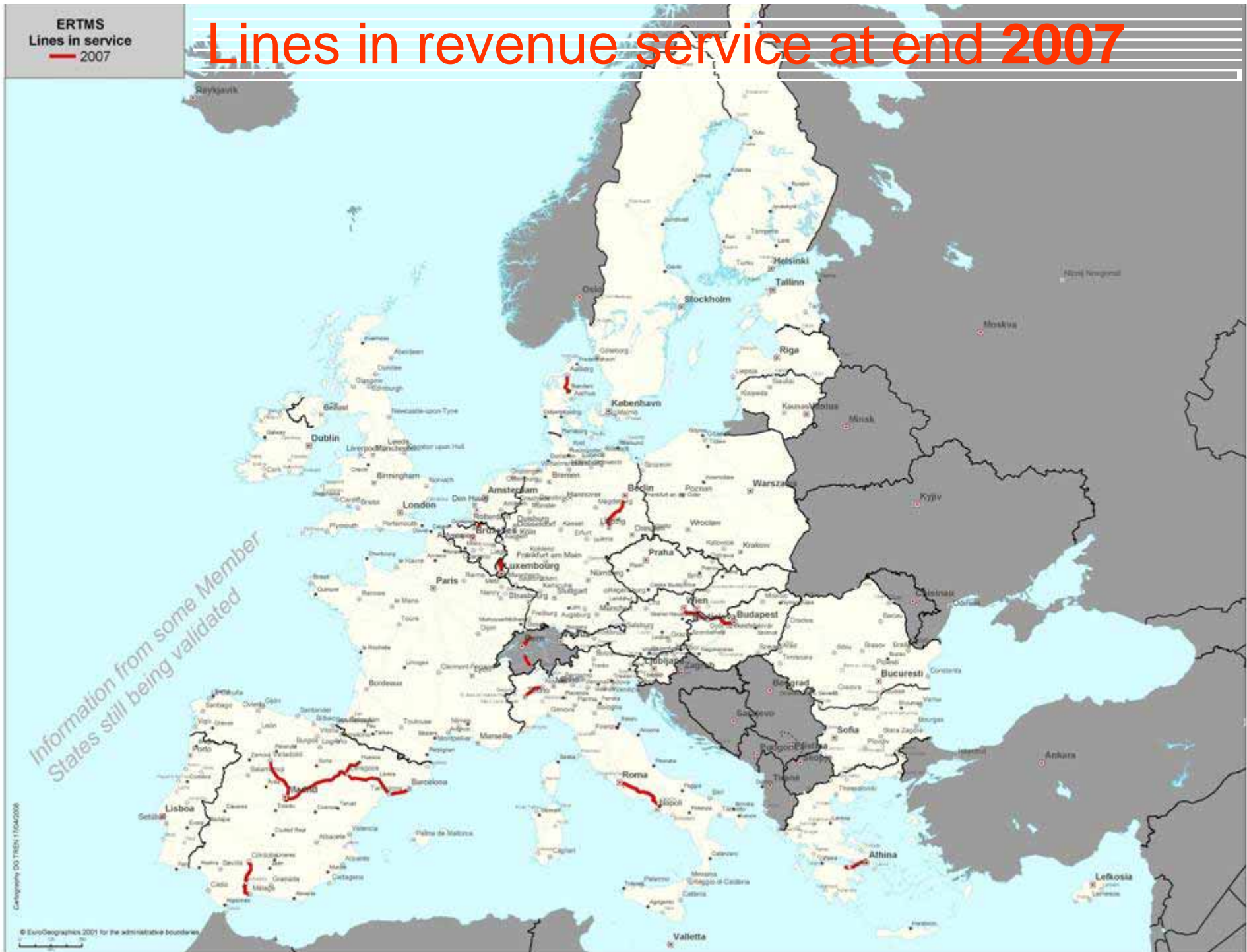
ERTMS Freight Corridor A : Rotterdam Genoa

● 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

ERTMS
Lines in service
— 2007

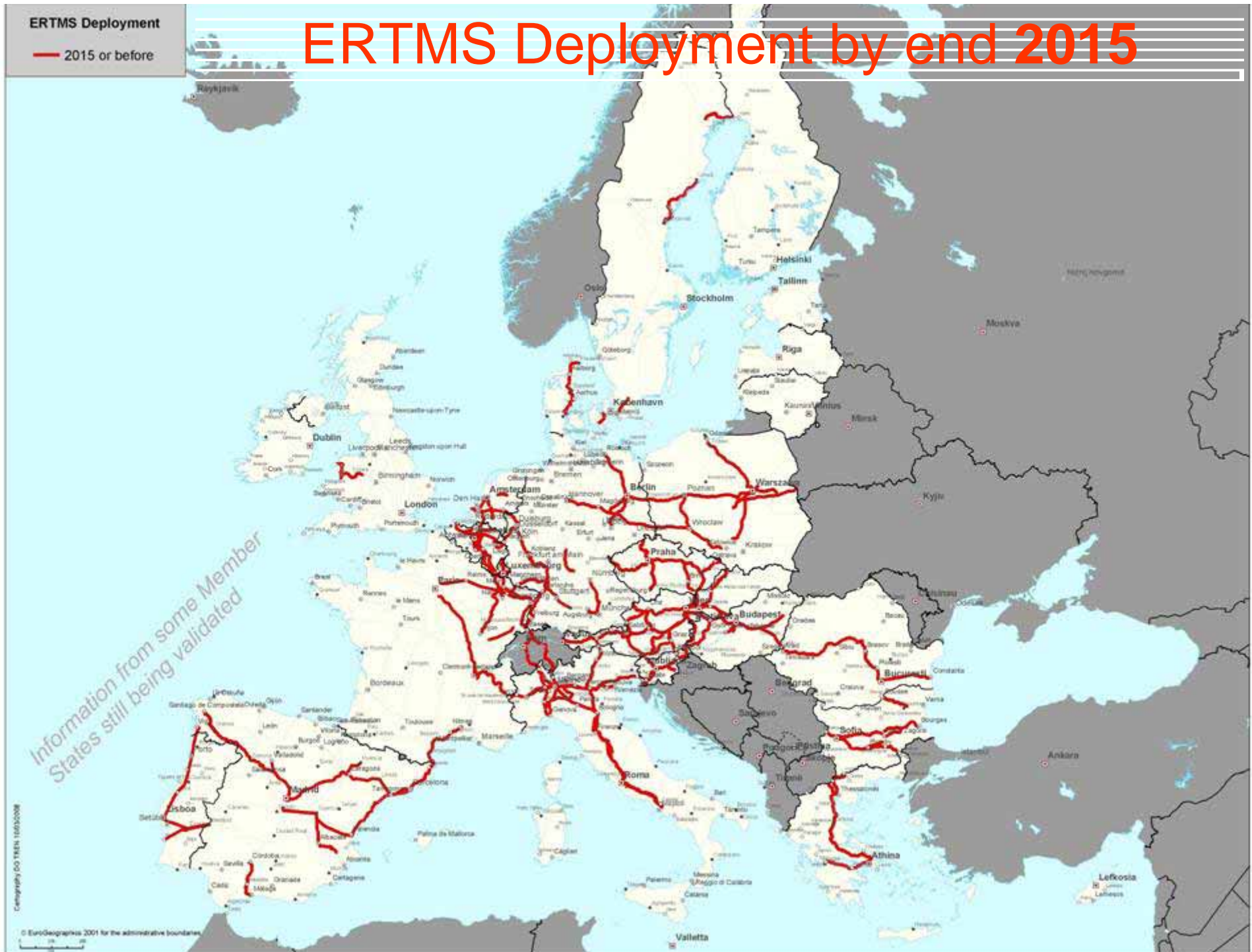
Lines in revenue service at end 2007



ERTMS Deployment

— 2015 or before

ERTMS Deployment by end 2015



Deployment outside Europe

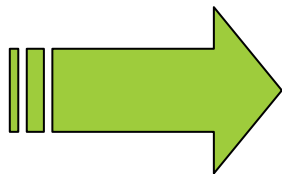


	Route / Locomotive	Vehicles	Route length (km)
Australia	Penrith-Glenbrook	-	14,5
	Wentworth Falls-Katoomba	-	11
	Meldow Bath-Mt Victoria	-	15,5
China	Beijing - Tianjin	-	117
	Shijiazhuang - Taiyuan	-	190
	Vehicle equipment	60	-
Taiwan	Total network	768	1.200
India	Delhi-Agra	35	100
	Madras-Gummudipundi	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**

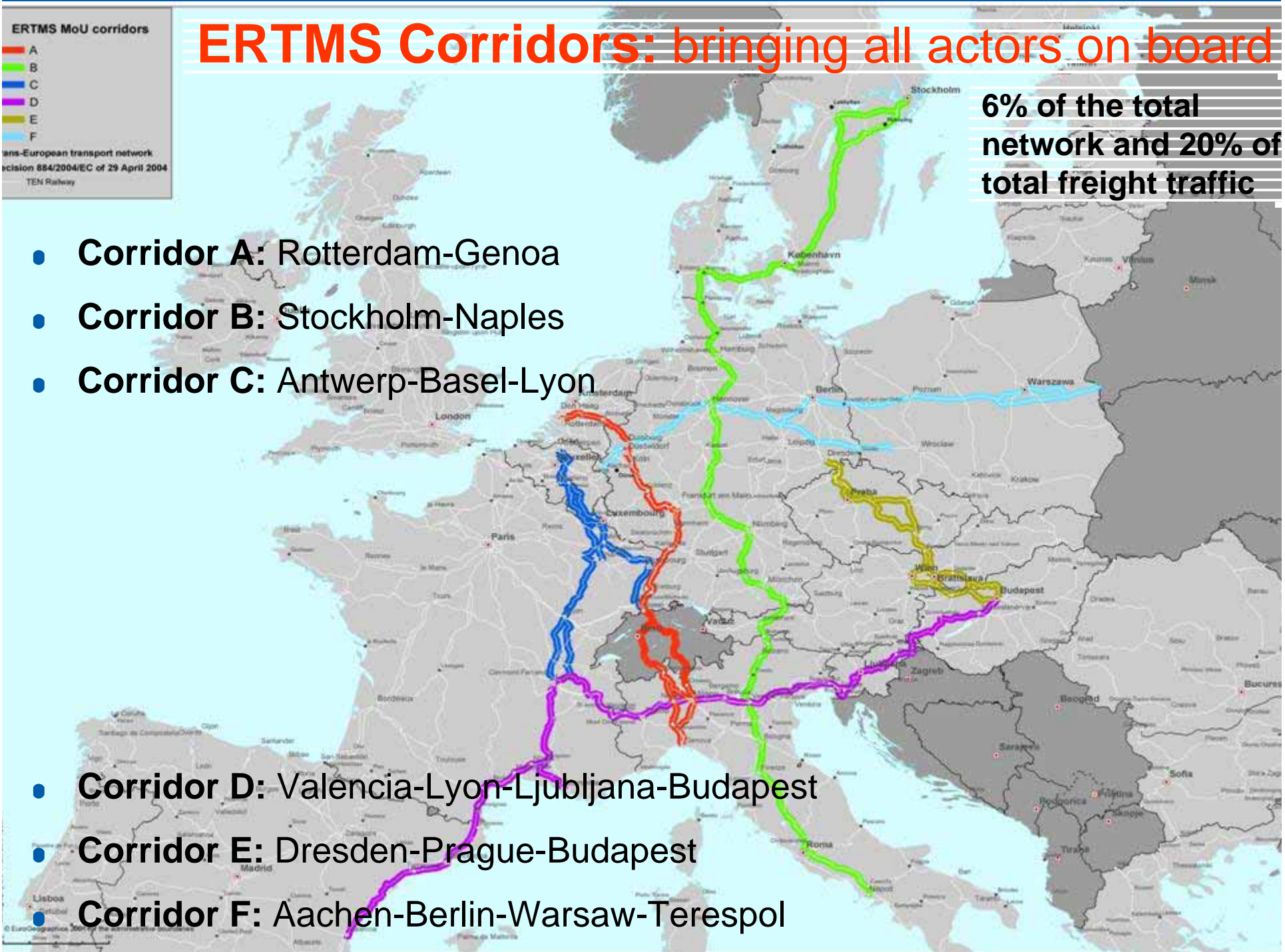
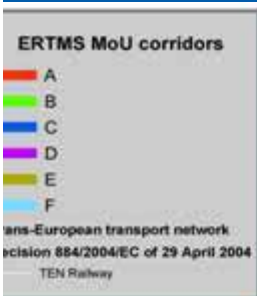


Reaching interoperability along corridors = third driver

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

● 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

● 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.))