European Commission

ERTMS: deployment

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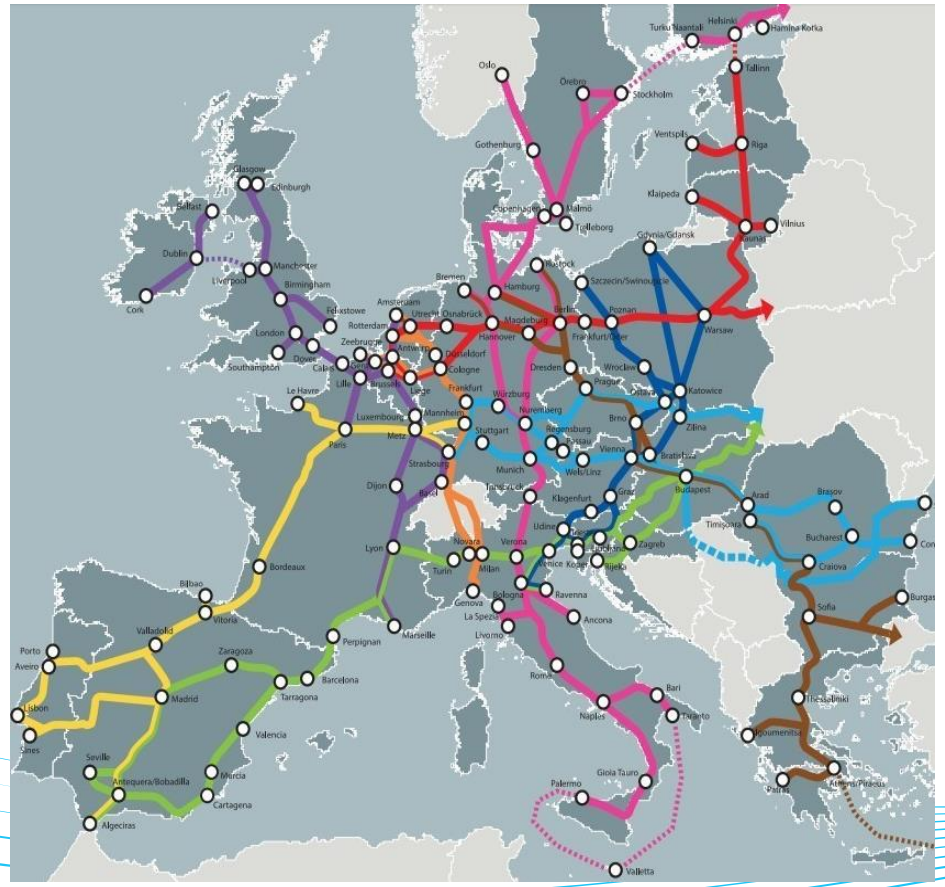
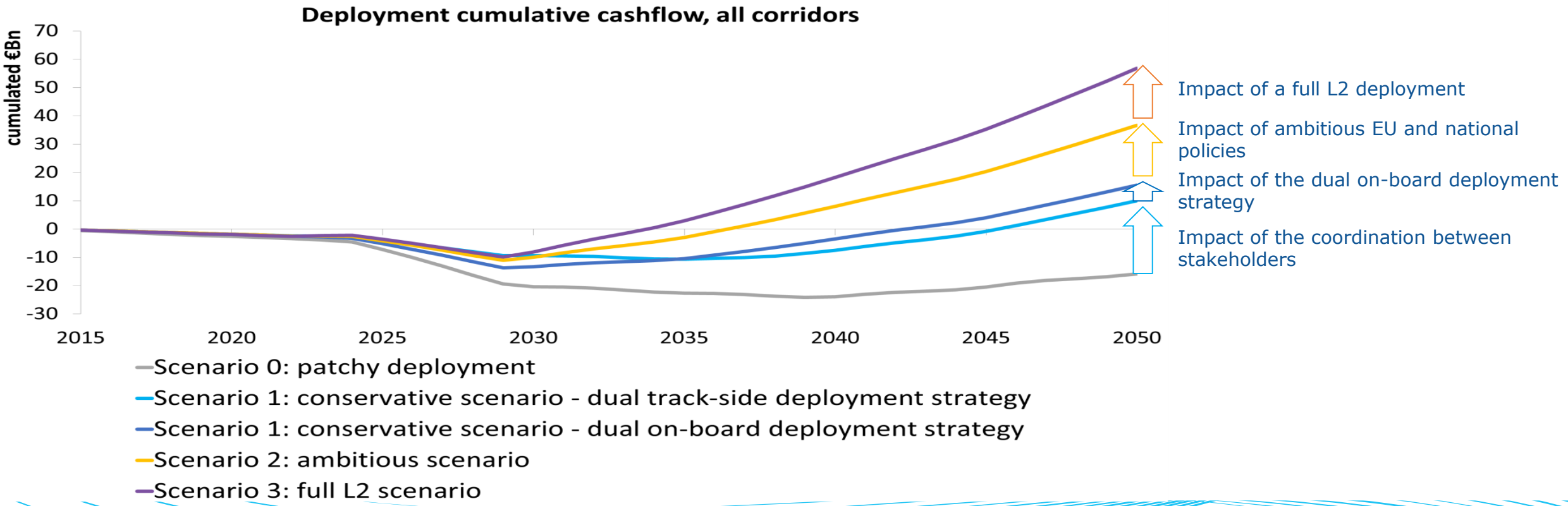
ERTMS deployment has a positive business case…….

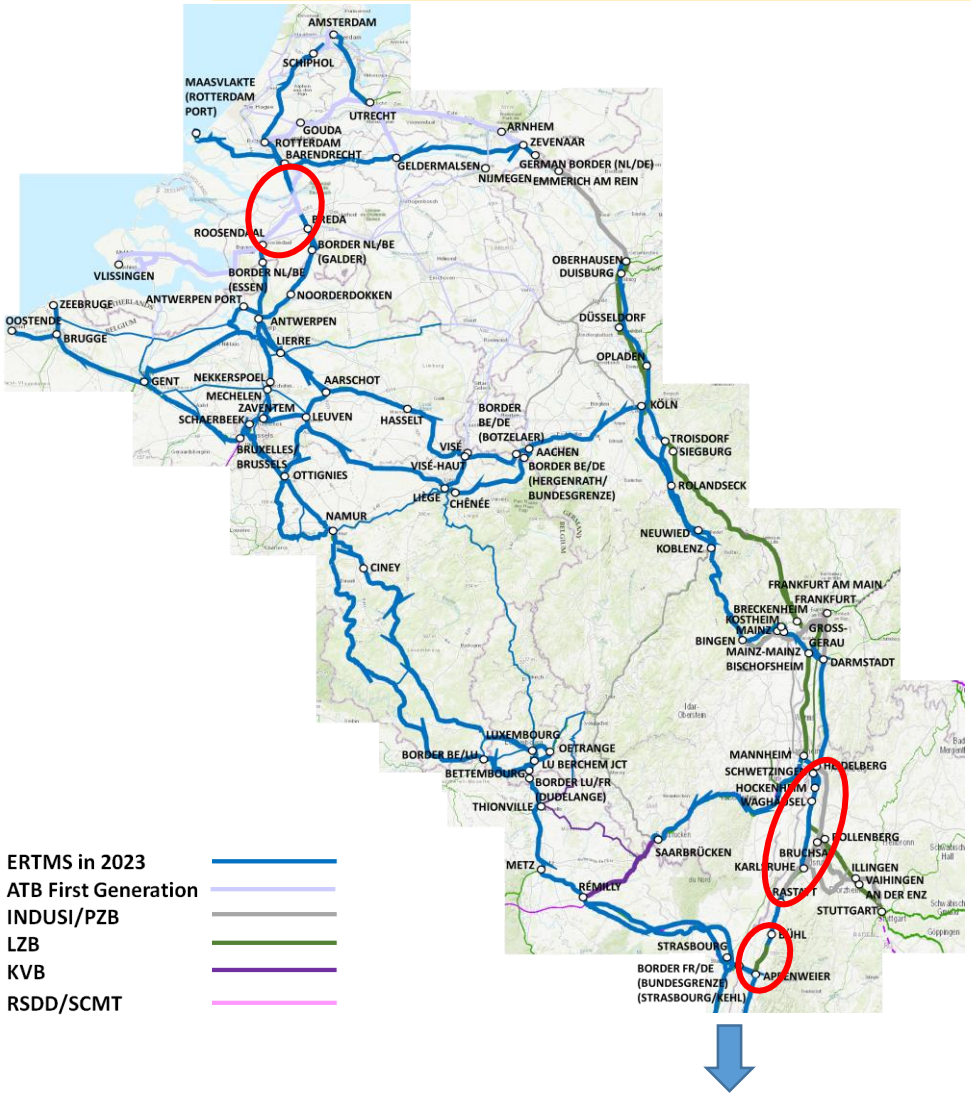


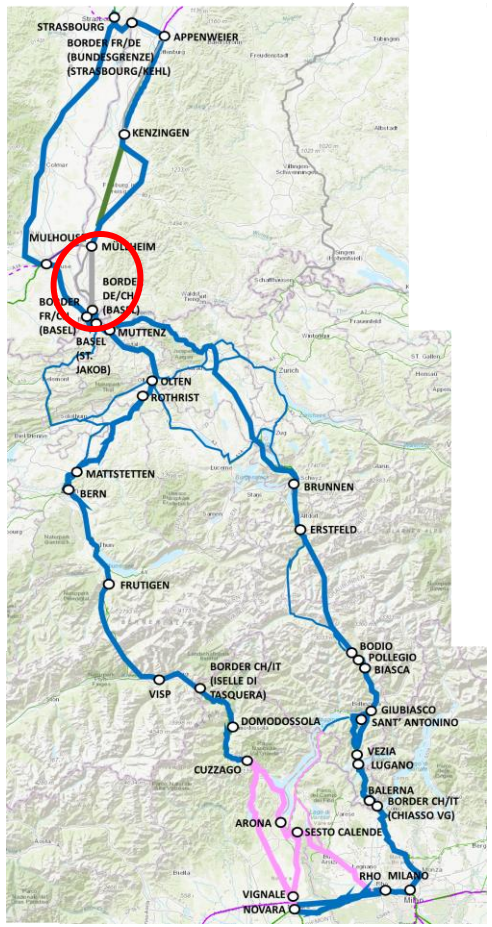
Rhine - Danube IRR: 10,0%
Mediterranean IRR: 6,8%
Atlantic IRR: 8,5%
Orient / East Mediterranean IRR:12,3%
Baltic - Adriatic IRR: 9,4%
North Sea – Baltic IRR: 13,4%
Scandinavian - Mediterranean IRR: 9,2%
Rhine - Alpine IRR: 9,1%
North Sea - Mediterranean IRR: 10,5%
Overall IRR: 9,6%

……. But it is dependent on co-ordinated deployment



We want coherent ERTMS networks across Europe…….





In 2023, the route form Rotterdam to Milano through Antwerpen will be equipped with ERTMS with the exception of the following gaps:

Section	Class B	Length (km)	Finish date
Barendrecht – Roseendal (NL)	ATB First Generation	43,321	2024
Heidelberg - Karlsruhe (DE)	INDUSI/PZB	59,33	2030
Karlsruhe - Rastatt (DE)	INDUSI/PZB	22,347	2030
Appenweier - Buehl (DE)	LZB	25,155	2027
Mulheim - Basel (DE)	INDUSI/PZB	24,434	2030

…but this is dependent on timely infrastructure deployment

Two ERTMS deployments:
- per Core Network Corridors (CNC)
- per Member States

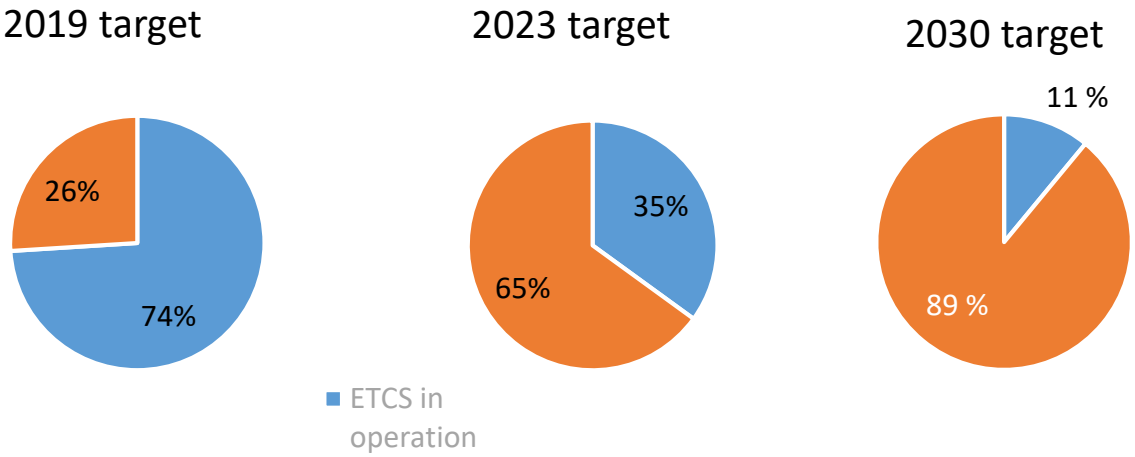
Two tools:
- Corridor commitments via ERTMS European Deployment Plan, Regulation (EU) 2017/6 (EDP)
- National commitments via National Implementation Plans (NIP), Regulation (EU) 2016/919 (CCS TSI)

=> Currently: 2000 km behind schedule

- EDP, 2017

Today

5.733 km



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ERTMS: future evolution

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Why?

- To compete, rail needs to fully embrace digitalisation, building on ERTMS
- It will improve interoperability, drive down costs, and deliver a better service for passengers and businesses:
  - Automation : better service, efficiency
  - Moving block : increased capacity , safety
  - Train localisation : safety, better information

Why now?

- Digital technologies are ready for implemention
  - We need to ensure that the system is optimally set up for their introduction
- Member States are looking to deploy ERTMS, and broader CCS changes at national level
  - This is a clear opportunity to optimise much more of the CCS value chain – to improve interoperability and drive down costs.

⇒ EU-led approach on the principles and governance of the evolution of the system

2022 TSI revision: digitalisation pillar

- Game changers: Automated Train operation, Future Radio, …..
- On board modularisation: to create a system that is more adaptable to change
- Enhanced technical and operational interoperability