



# ERTMS business case and the rolling stock challenge

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**Digital Capacity Management for Belgian Rail Freight**

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## ERTMS benefits

- Safety
- Capacity
- Maintenance costs of both the infrastructure and rolling stock
- Second-hand value of the rolling stock
- Interoperability - access to a larger market
- Enabler for the digitalization of the railway system – ERTMS the digital backbone

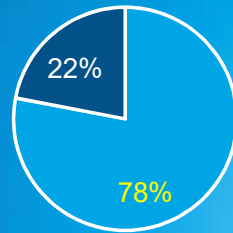


# ERTMS deployment trackside on CNC

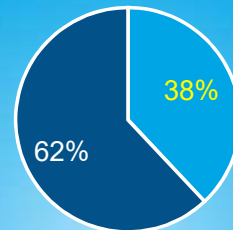


**Today**  
**6.120,54 km**

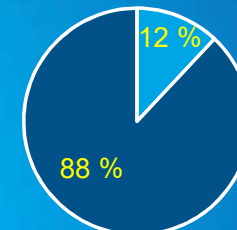
2019 target



2023 target



2030 target

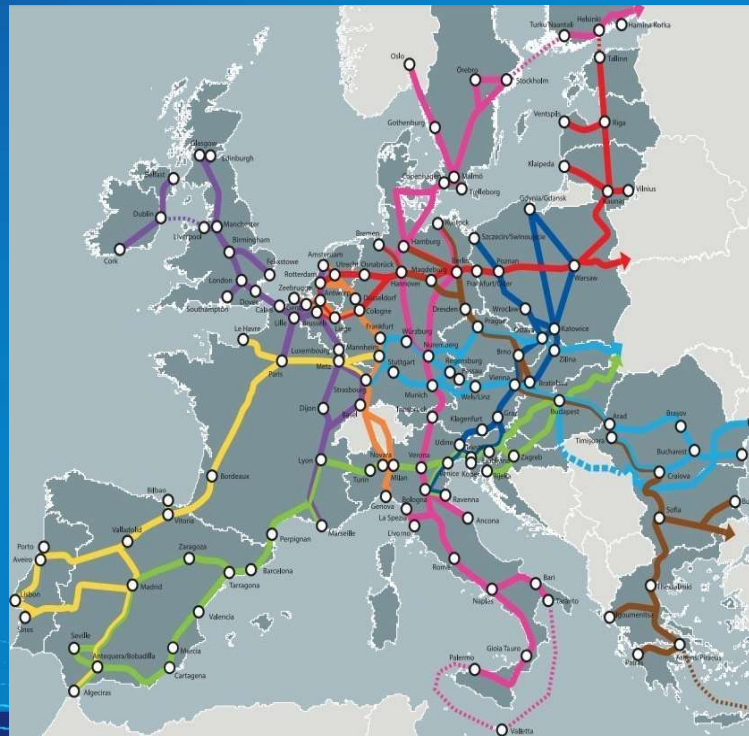


□ ETCS in operation

There are in operation 264 km planned in the EDP between 2020 and 2023, and 214 km planned beyond 2023

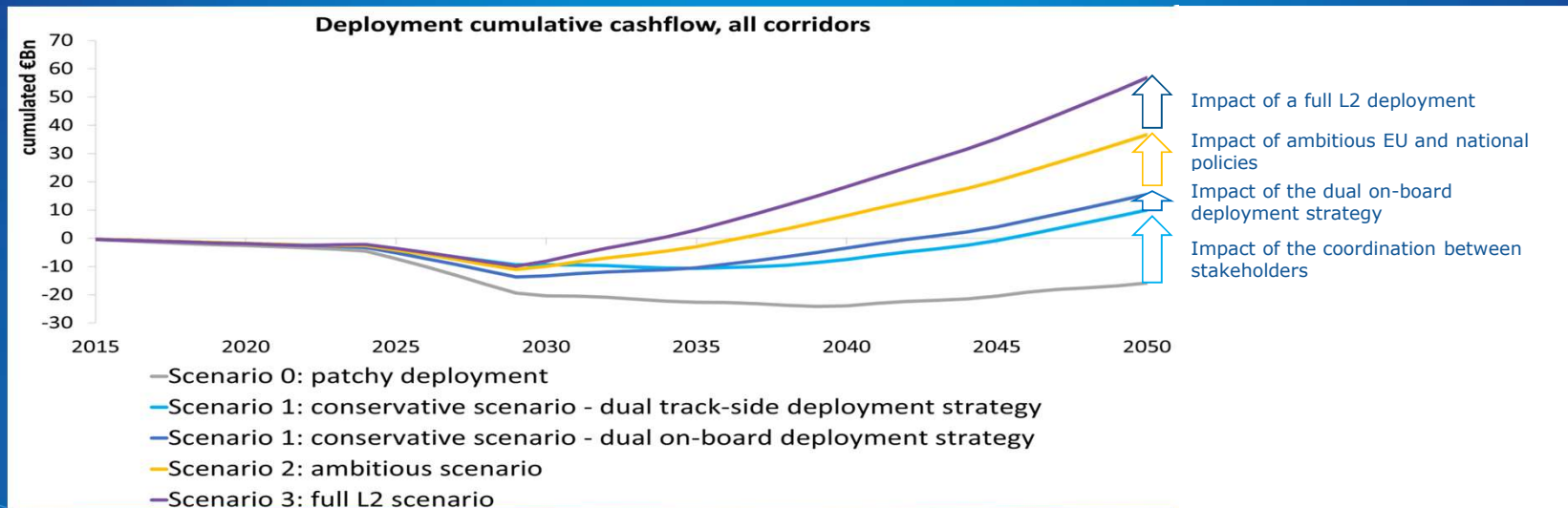


# There is a positive business case for ERTMS deployment...



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%
<b>Overall IRR: 9,6%</b>

# ...but it is dependent on coordinated deployment both trackside and on-board





# ERTMS on-board deployment

- The business case analysis demonstrates that the best transition deployment strategy at **corridor level** is a **dual on-board strategy**
- Therefore, the **whole fleet** operating on CNC has to be equipped with B3R2 by 2030
- In countries where a large part of the network is covered by CNC, **100% of the fleet to be equipped**
- In countries where there is still a large part of the network without any CNC, size of the fleet to be equipped depends on the scenario
- Vehicles can be equipped via: either **renewal** (e.g. if vehicle is older than 30 years before 2030) or **retrofit**



# ERTMS deployment on-board challenge

Vehicles equipped with ERTMS by end 2019:

In total around **3.600** vehicles equipped with ERTMS

In the last 10 years, **2.700** vehicles have been retrofitted

In the last 5 years 5.000 new vehicles have been introduced in Europe but only **900** of them have been equipped

On average **270 vehicles / year** retrofitted

On average 1.000 new vehicles / year, **180 vehicles / year** equipped with ERTMS

Future vehicle equipment forecasts until 2030:

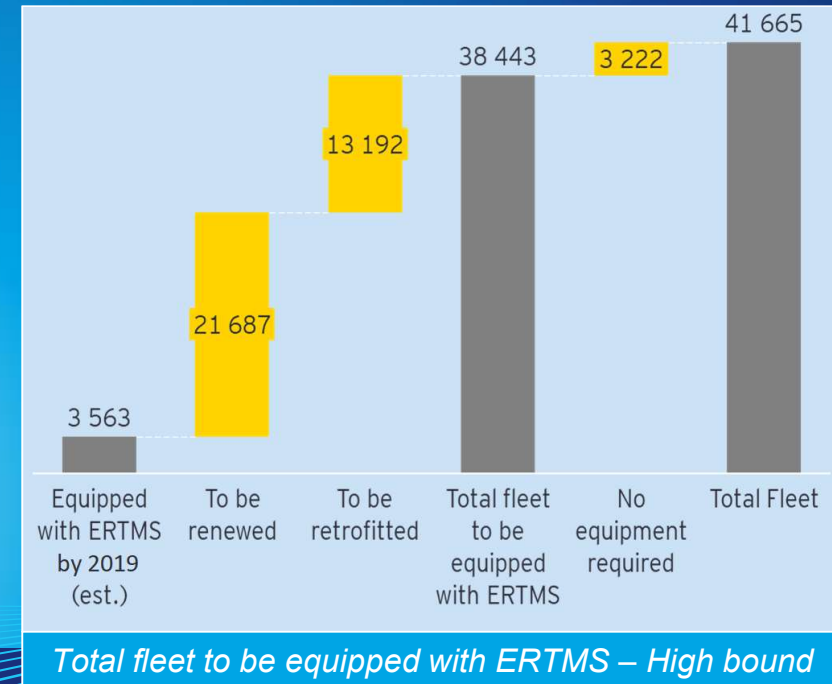
Around **24.000 to 34.800** vehicles to be equipped with ERTMS

**8.500 to 13.000 vehicles** to be retrofitted

**15.500 to 21.500 vehicles** to be renewed

On average **700 to 1.100 vehicles / year** to be retrofitted

On average **1.300 to 1.800 vehicles / year** to be renewed



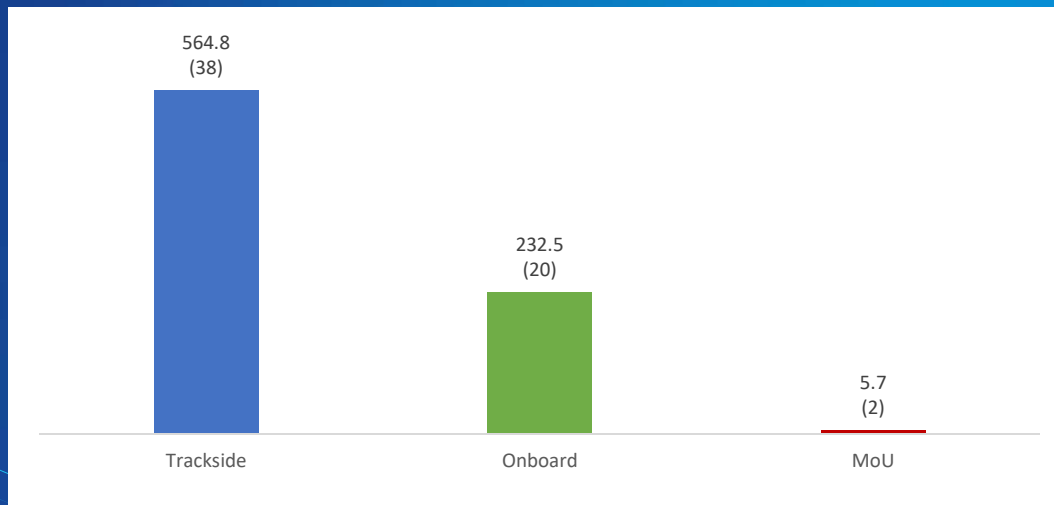


## Rolling stock deployment plan

- There is a positive business case at system level but the benefits are in first place for the IMs and the costs for RUs (**particular challenge for the freight operators**)
- Commission has adopted ERTMS Retrofitting strategy Funding and Financing + new ERTMS +1 class B system report in the pipeline
- A consolidated view on the upcoming retrofitting needs is important to:
  - Ring-fence sufficient public financing and analyze possible avenues to channel them
  - Address the state aid issue
  - Mobilize smaller railway undertakings (especially freight)
  - Determine capacity needs
  - Identify prototypes
  - Promote standard solutions and reduce costs



## CEF Funding 2014-2018



**Track side:** 38 actions on **6,382** km:  
 1. Deployment (5,497 km, 86%)  
 2. Upgrade (885 km, 14%)

**On-board:** 20 actions regarding **1,927** vehicles:  
 1. Retrofitting (1,418, i.e. 74%)  
 2. Upgrade (448, i.e. 23%)  
 3. Prototype (61, i.e. 3%, both for retrofit and upgrade).

Actual CEF Transport funding for ERTMS Actions per component, EUR million (number of actions)



## Some conclusions

1. Time to accelerate is now
  - Digitalization, Green Deal and industrial recovery
2. Trackside : think network
  - Focus on cross-border sections, existing gaps, main rail nodes, terminals. De-commissioning of class B systems
3. On board: risks going "overboard"
  - Development of renewal/retrofitting strategy
4. More money but wisely spent
  - RRF, Ensuring predictable budgets and non - disruptive evolution
5. Prepare the future united



**Thank you for your attention**