



ERTMS Deployment in Europe

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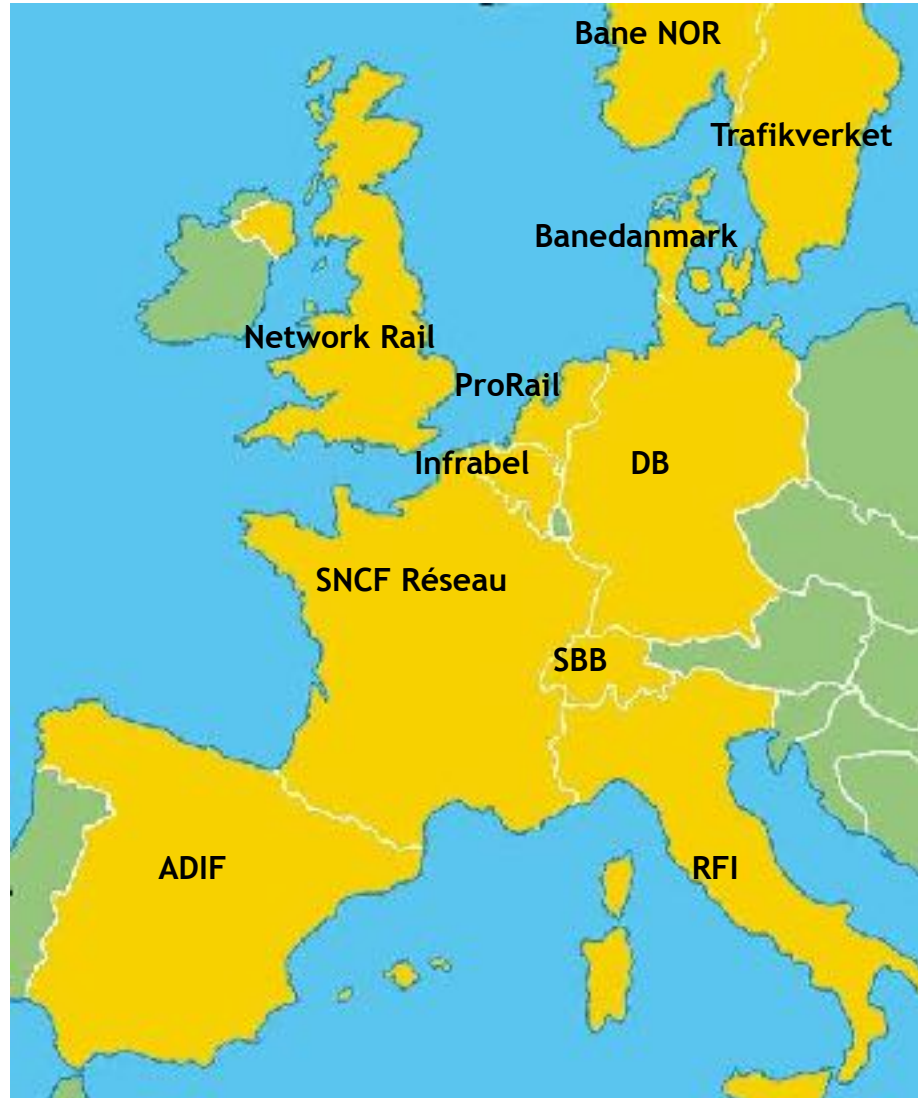
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Content

- Introduction ERTMS Users Group (EUG)
- Current status of ERTMS deployment in Europe
- Other relevant developments

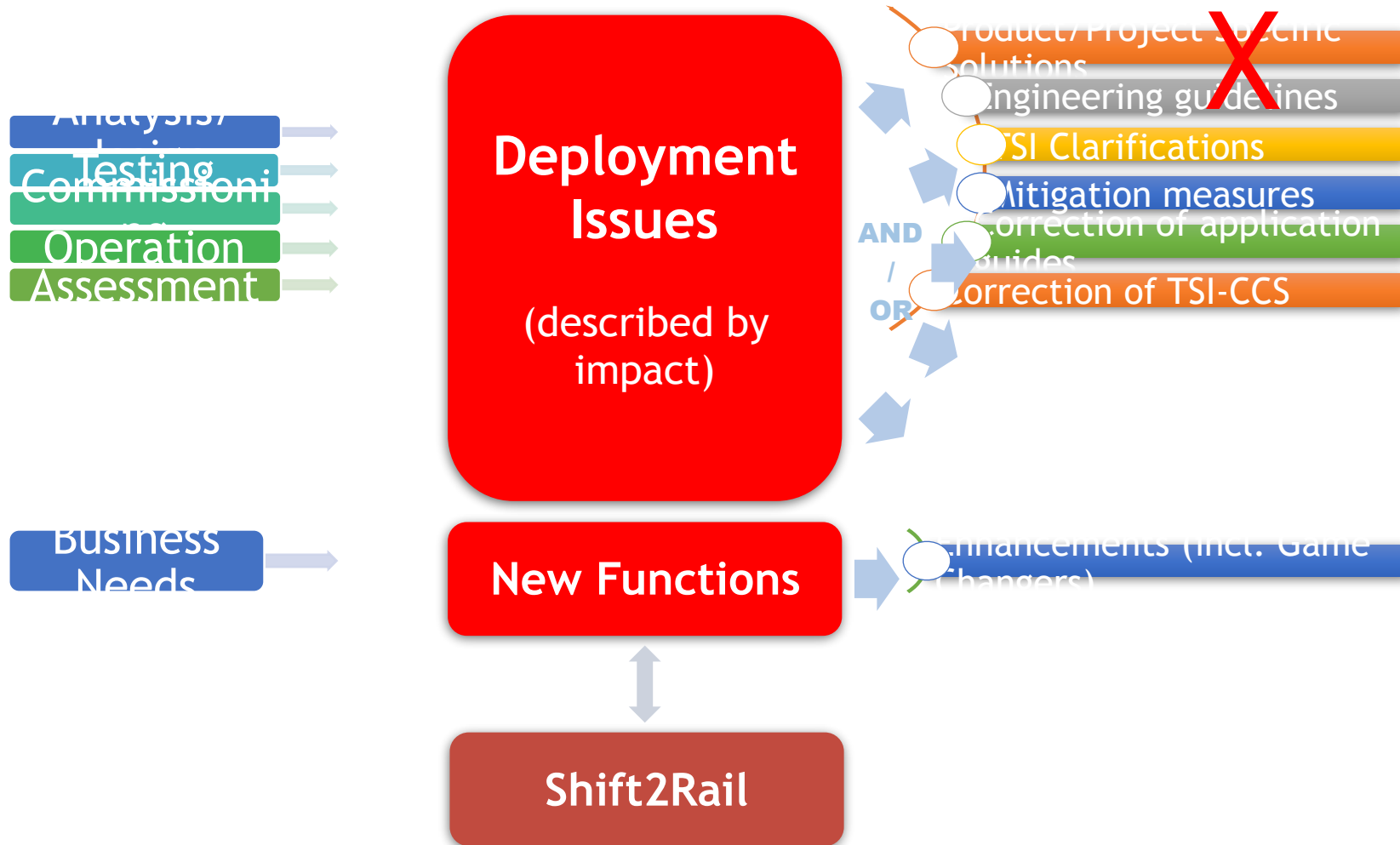
EUG Members

All EUG members deal with substantial ERTMS investments (> € 250 million) in their network;

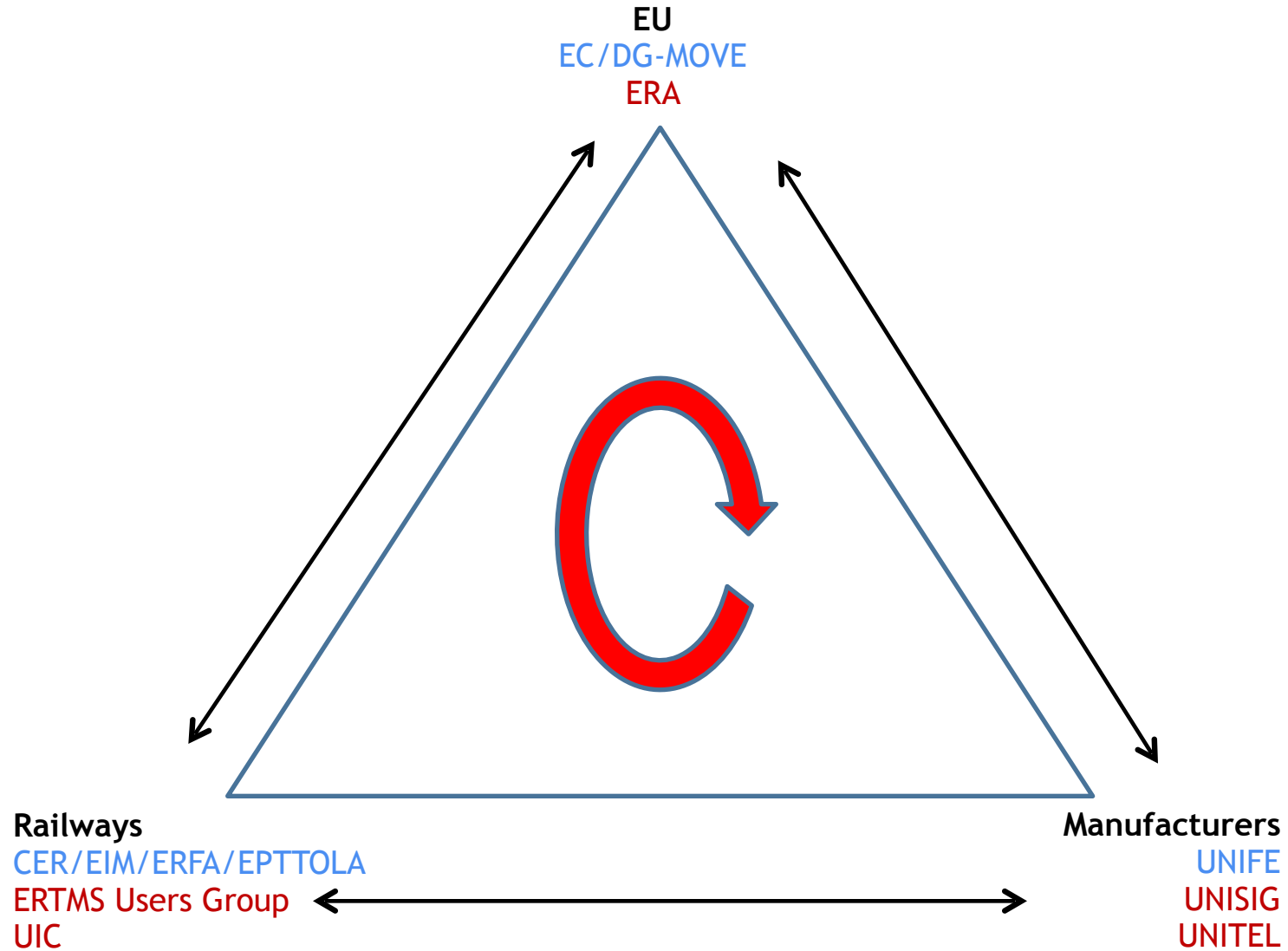


Also connecting with Railway Undertakings on practical issues

Main activities in the field of ERTMS



Role and level



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Deployment overview (EUG members)

- Norway: **Strategic decision** to roll out **Level 2 all over the country**. Contracts signed in 2018. Planned to be finalised by 2034. Pilot Level 2 line in operation since 2015
- Sweden: ERTMS Level 2 B2 is running since several years on a few lines and planned to be upgraded to B3R2 during 2020. Pure **Level 2** is planned to be rolled out **on the complete network** finalized 2035
- Denmark: **roll out Level 2 all over the country** in progress. First line in operation. Planned to be finalised by 2030,

Deployment overview (EUG members)

- United Kingdom: **national rollout of ETCS** commenced in 2011 with Cambrian, followed by Thameslink introducing **ATO over ETCS** in 2018. Updated national deployment plan due to be released by member state shortly
- The Netherlands: Five ERTMS lines in operation (appr. 300km double track). Decision about further roll-out of ERTMS L2 only is foreseen mid 2019
- Germany: Feasibility study of a combined rollout of ETCS and Digital Interlockings across the entire German rail network has been completed in 2018. German government will take a **decision in March 2019 about a rollout,**

Deployment overview (EUG members)

- Belgium: **Master Plan ETCS** to roll out Level 1 FS, Level 2 FS and Level 1 LS **all over the country** via different contracts (last signed in 2015 for ETCS2). Planned to be finalised by 2025. Status end 2018 : 24% equipped, mainly in ETCS1 FS. First line in ETCS2 in service since October 1018
- France: Level 1 equipment on **corridor line** Longuyon-Basel in progress (planned to be finalised in 2022). **Pilot projects for "Level 2 only"** on HSL Paris-Lyon (planned to be finalised in 2025) and conventional line Marseille-Vintimiglia (planned to be finalised in 2030),

Deployment overview (EUG members)

- Switzerland: **whole network either L1LS or L2 equipped.** Further deployment of L2 connecting to existing L2 lines only when no impact on fleet. Strategic goal is cab signaling for the whole network - deployment depending on future TSI and products
- Spain: Priority in the network **corridor, high speed lines and commuter lines** of the bigger cities
- Italy: **strategic decision** to roll out ERTMS on the **entire Italian railway infrastructure** (16800 km) by 2035, and equipping 5,000 vehicles. **Simultaneous decommissioning of Class B.**

Deployment action plan

- Commission staff working document SWD(2017) 375:
'Delivering an effective and interoperable ERTMS - the way ahead'
- Focus on:
 - Interoperable and compliant infrastructure
 - Standardisation of On-Board Unit
 - Efficient Testing and Validation
 - Maintaining ERTMS in a reliable and consistent manner
 - Funding/financing of ERTMS: trackside and on-board
- Discussions take place in ERTMS Stakeholders Platform, chaired by DG-MOVE and EU Agency for Railways (ERA)
- Supported by MoU ERTMS Consortium (EUG, UIC, UNISIG, UNITEL and independent laboratories/INECO) under the umbrella of Shift2Rail.

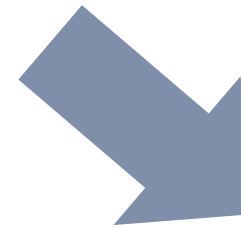
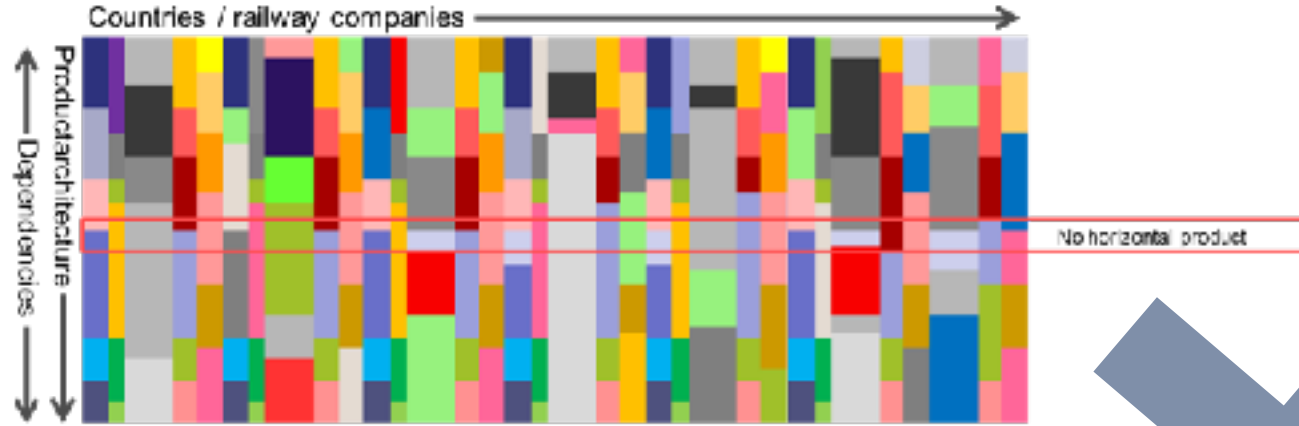
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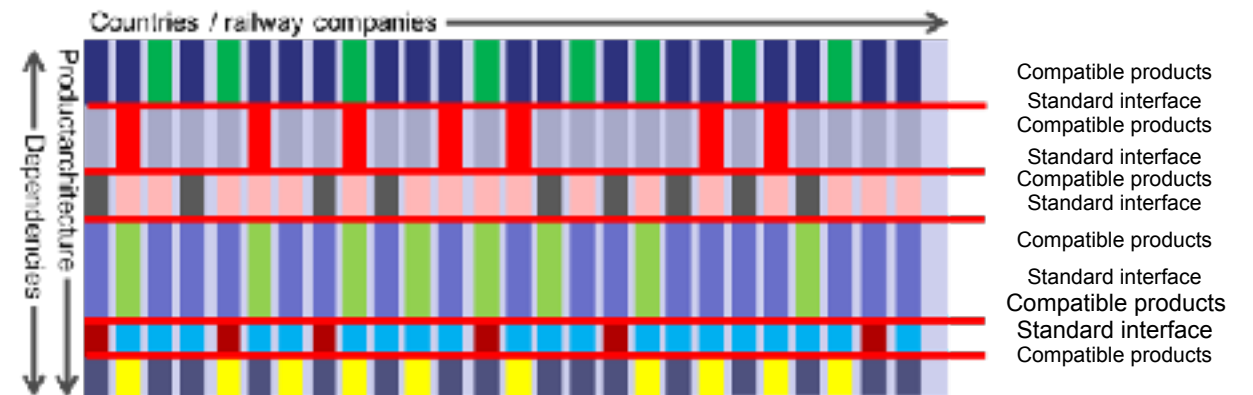
Update of TSI CCS

- ERTMS **Game changers** (ATO, Level 3, Next Generation Telecom, Satellite navigation, braking curves):
 - ERA can issue an **opinion with draft release specifications** prior to next TSI revision and these specifications should be used
- **ETCS/Radio System Compatibility checking**
 - Infrastructure managers to submit the required checks before 16-01-2020
- Changes to On-Board Unit
 - **Criteria defined whereby changes to OBU do not require a reauthorization**
- Phasing out of Euroloop and Radio Infill
- Baseline 2 On-Board Units for new vehicles can be placed on the market up to December 2020 (with requirement for upgrade before July 2023).

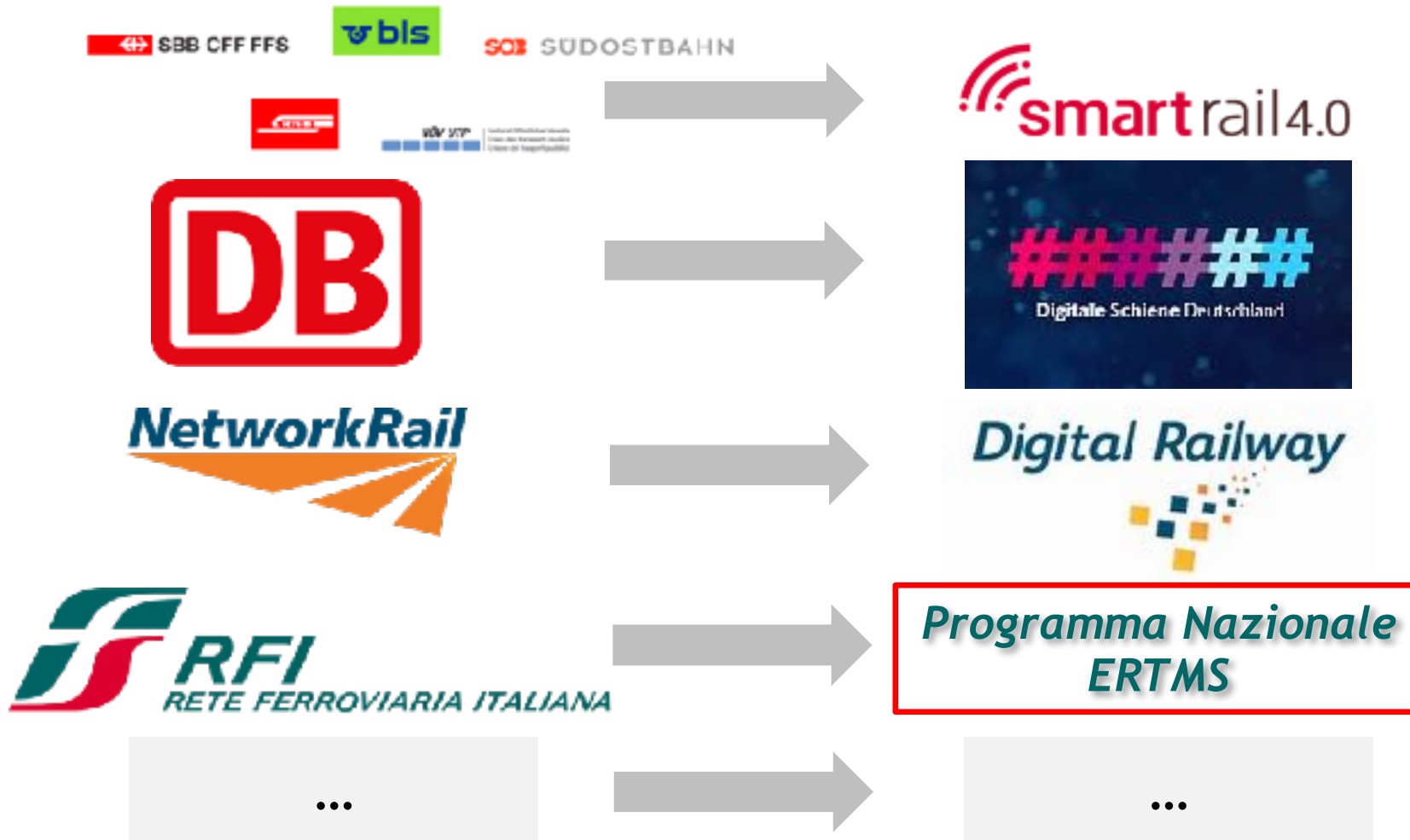
Reference CCS Architecture (based on ERTMS)



- Low Life Cycle Costs
- Single modular framework
- Migrate-ability
- Adaptability
- Safe investment



Relationship with national initiatives



- Work closely together to:**
- **Contribute to RCA**
 - **Apply RCA specifications**

Thank you for your attention

For more information:

www.ertms.be



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