Evolution of ERTMS: CCS TSIs
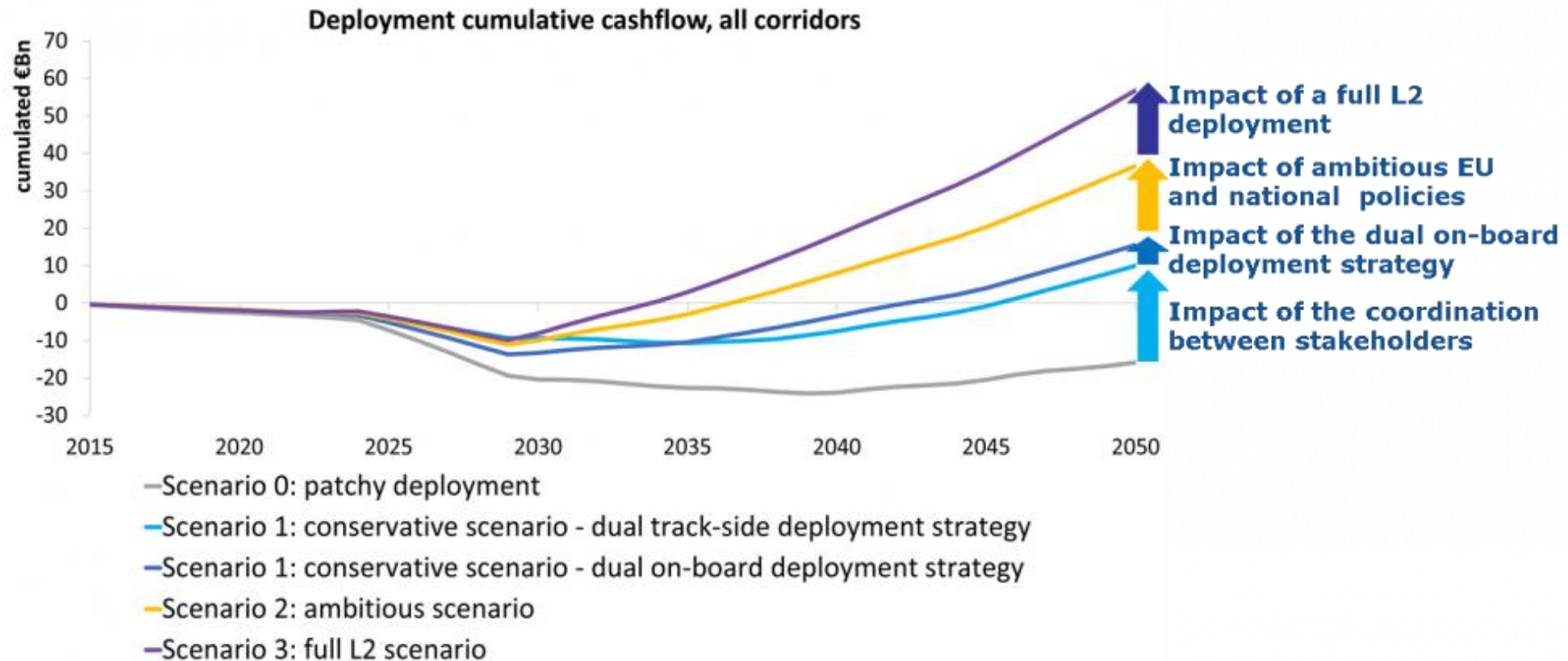
ERTMS 2022 Conference - Valenciennes

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Policy context

- Green deal, Fit for 55, Smart and Sustainable Mobility Strategy

  - **50% more freight by 2030, 100% by 2050**

  - **2x more high speed by 2030, 3x by 2050**

➢We need more ERTMS deployment

➢We wish to ensure investment in rolling stock is future-proof

- CCS TSI revision is an important tool

Stronger deployment 1/2

Deployment cumulative cashflow, all corridors

- —Scenario 0: patchy deployment
- —Scenario 1: conservative scenario - dual track-side deployment strategy
- —Scenario 1: conservative scenario - dual on-board deployment strategy
- —Scenario 2: ambitious scenario
- —Scenario 3: full L2 scenario

Impact of a full L2 deployment

Impact of ambitious EU and national policies

Impact of the dual on-board deployment strategy

Impact of the coordination between stakeholders

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Stronger deployment 2/2

- Track side – provided by the TEN-T

  - Core network by 2030

  - Comprehensive network by 2050, no! by 2040

- On-board – provided by the CCS TSI

  - For vehicles in production from 2030

  - For entirely new vehicles types from now

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Robust mechanism for specs changes 1/2

- Transition regimes

  - Philosophy aligned with other TSI (for Rolling stock)

  - Transparently described (timing, vehicle phase concerned)

  - Changes before becoming mandatory:

    - Member States to balance benefits and costs in NIP;

    - Minimum guaranteed compatibility windows 7y. and 5 y. notification by IMs; possible agreements IM-RU

Robust mechanism for specs changes 2/2

- Error corrections

  - Suppliers to provide corrections for unacceptable errors to operate on a given area of use

  - Unacceptable error - impacting safety or interoperability

  - 2 years for the deployment

Performance enhancing innovations

- Balancing stakeholder's interest

- Today's game changers:

  - **Automated train operations – Grade of Automation 2**

  - **Future Radio Mobile Communication System**

- Enabling clauses (min set of specs) – for quick deployment once full specs available (FRMCS)

- Transition regimes, with long pre-announcement periods (e.g. FRMCS, 5 y. before de-commissioning GSM-R)

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Modular architecture

- ERTMS future proof – plug&play (aim)

- Introduction of modularity

- Currently interfaces for ATO and radio (FRMCS)

- More options based on future system architecture

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Future enhancements

- Based on the mechanism of specification changes

- Early announcement, agreed transition regimes

- Modularity

- Test driven on current innovations (ATO and FRMCS)

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Thank you

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