Fall 2025 Outlook of Rail ITS

Rail ITS in the Nordics 16.9.2025

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SOLITA

Solita?

We create value from data in a connected world.

Our aim is to create lasting impact by:

→ **Utilizing data and IT**

→ **Combining them with human insight**

→ **Cooperating with our tech partners**

TURNOVER IN 2024

250+M

→ **Founded in 1996**

→ **2,100+ employees**

→ **10 countries**

→ **29 cities**

1. **Software development**
2. **Strategy**
3. **Data & AI**
4. **Design**
5. **Cloud**
6. **Connectivity**


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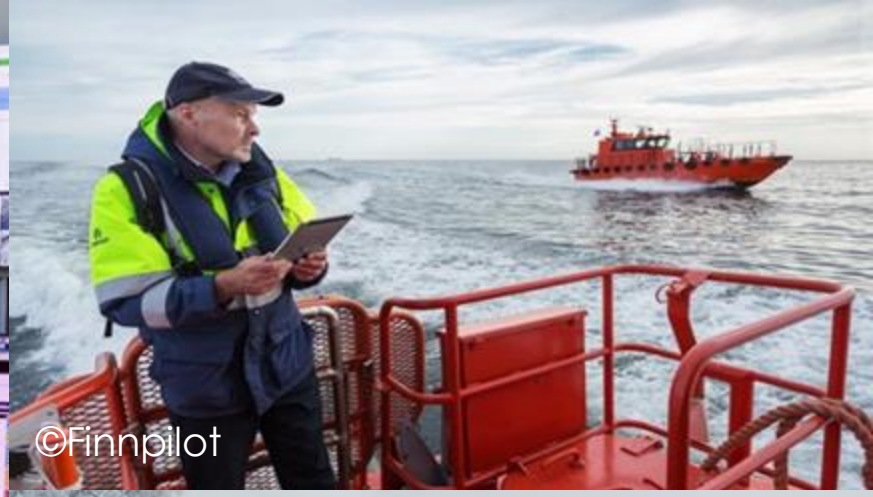
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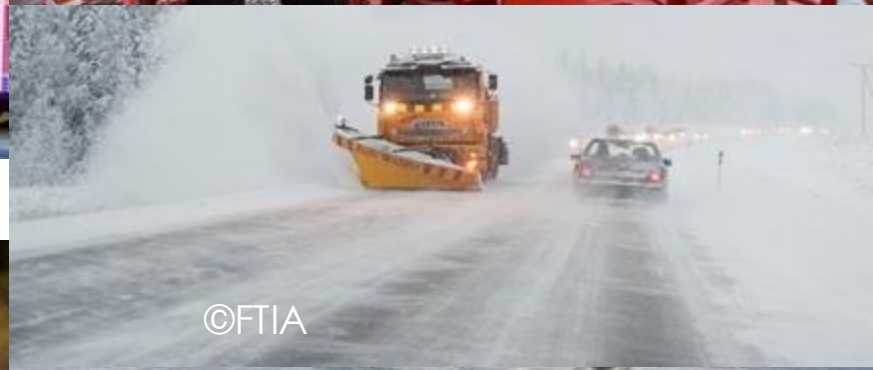
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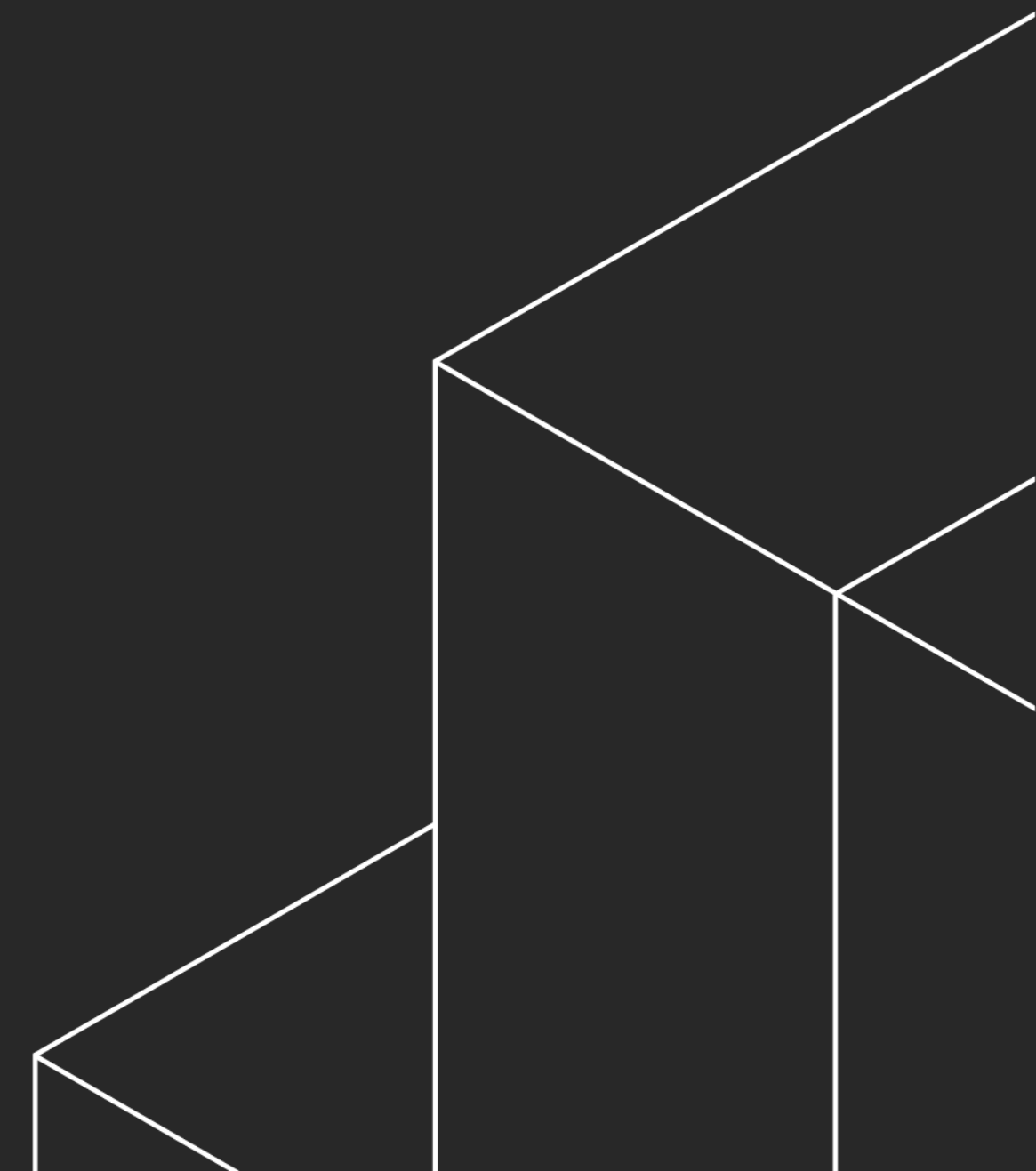
Rail ITS Outlook



Current challenges in railway domain

1

Digitalization vs. Legacy Systems

Transitioning to modern platforms like ERTMS and FRMCS is complex, requiring significant investment and operational overhaul.

2

Communication Infrastructure

Intelligent rail operations demand robust, high-capacity communication networks.

3

Cybersecurity Risks

Cyber threats rise with digitalization; secure design and monitoring are key.

4

Interoperability and Standardization

Fragmented standards block cross-border interoperability.

5

Organizational and Managerial Transformation

Digital projects need stakeholder alignment and skilled workforce.

6

Funding and Business Models

High costs demand viable funding and business models. Road traffic electrification brings low-cost low carbon competition

7

Environmental and Capacity Pressures

Capacity must grow to meet EU green goals without significant new infrastructure.

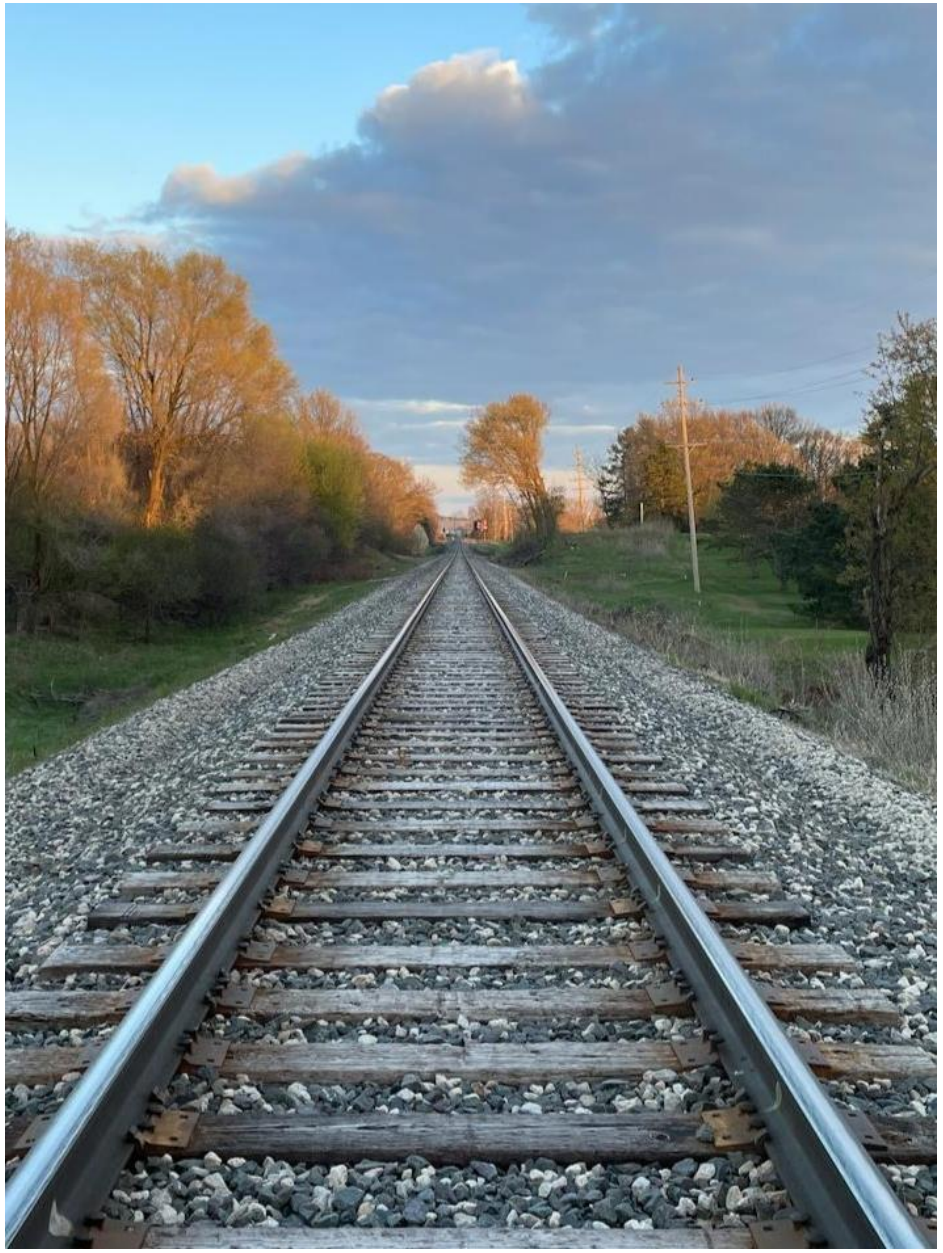
8

Technological Integration and Data Management

Integrating AI, IoT, and predictive analytics into rail operations faces challenges in data standardization, real-time processing, and compatibility with legacy systems.

Case: Cross-border interoperability with TAF TAP TSI

- **Standardized Data Exchange**
  - Real-time sharing of schedules, delays & freight info.
- **Interoperable IT Systems**
  - Common formats reduce manual work & errors.
- **Transparency & Tracking**
  - End-to-end visibility with digital tracking tools.
- **Coordinated Planning**
  - Supports cross-border traffic, path allocation & predictive operations.
- **EU Compliance**
  - Aligns with Single European Railway Area goals.



There are information borders also between national and private rail networks

Case: Digital twins for more efficient railways

- **Digital Twin Concept**
  - Digital twins are virtual replicas of railway assets, updated continuously with data from f.ex. IoT sensors
- **Predictive Analytics**
  - Algorithms analyze fault and maintenance data to identify trends and detect early signs of potential failures.
- **Optimized Maintenance Scheduling**
  - Digital twins help plan maintenance at optimal times, reducing costs, disruptions and unplanned downtime.
- **Enhanced Safety and Asset Longevity**
  - Proactive maintenance improves safety and extends the lifespan of railway components.

“One quarter in railways lasts 25 years”

But does it have to?