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<https://rail-research.europa.eu/rail-projects/fp5-trans4m-r/>



The project FP5-TRANS4M-R is supported by the Europe's Rail Joint Undertaking and its members.

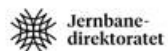


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FP5TRAN54M-R
Transforming
Europe's Rail Freight

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Partners



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Project Goal

FP5-TRANS4M-R's overall goal is to establish rail freight as backbone of the lowest emission and most resilient logistics chain in Europe, fulfilling the end customer requirements to their full satisfaction. Therefore, the project builds upon the goals and vision of the European Commission addressing the needs to significantly boost the rail freight transport through increased capacity, strengthened cross-border coordination and cooperation between rail infrastructure managers, better overall management of the rail network, and the deployment of new technologies such as digital coupling and automation. These goals set the foundation, frame, and ambition for the project.

Key Messages

→ Higher throughput and shorter transportation duration

- Achieve a 40% reduction in train formation/decomposition time
- Achieve a 45% reduction in train preparation time
- Enable 1500-meter freight trains

→ Maximize flexibility and reliability of rail freight services

- 10-20% faster transportation
- 50% less border dwell time
- 20% fewer stops
- 70% quicker cross-border responses
- 50% faster intermodal responses
- 10% lower energy consumption

→ Mitigating demographic change

With demographic changes, the workforce is aging and fewer people are available for physically demanding work in yards. FP5-TRANS4M-R offers technologies to automate and digitalize operations, along with guidelines to ensure acceptance of these new technologies.

Expected Results

Full Digital Freight Train

- **Digital Automatic Coupling:** Enables intelligent freight train applications through data and energy connections
- **Automation of Train Processes and monitoring:** Train composition detection, integrity monitoring and brake tests
- **Automated Yards:** Camera-equipped checkpoints and automatic coupling and uncoupling of wagons

Innovative Freight Assets

- **Tests and demonstrations:** Multimodal Hydrogen container and self-propelled freight wagon

Seamless Freight

- **End-to-End Planning:** New functions such as intermodal routing and dynamic information systems
- **Real-Time Data Exchange and AI-Based Predictions:** Direct interaction with new traffic management systems and dynamic dispatching in yards

