Press Release

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Progress of DAC and Seamless rail freight technology development shown in Vienna

During the midterm event of Europe's Rail Flagship Project 5 TRANS4M-R all project partners gathered at ÖBB Headquarter to share the project's progress with the public.

Europe's Rail funded Flagship Project 5 (FP5) TRANS4M-R held its **Midterm Plenary event** on May 16th, 2024, in Vienna **to present the project's progress** since it began in July 2022. Recent achievements and relevant milestones were presented and explained. 100 participants from the project partners came to Vienna in person and more than 150 stakeholders from outside the project joined the livestream of the event online. While the general progress of the project was presented in the morning, there were five thematic sessions with presentations and panel discussions in the afternoon, which examined the various focus topics of FP5-TRANS4M-R in detail.

General state of play of Europe's Rail and the Flagship Project 5 TRANS4M-R

Mark Topal, CTO, ÖBB-Holding, and Chairman of the FP5-TRANS4M-R Steering Group, opened the Midterm Plenary Event and welcomed the FP5 project partners at ÖBB premises. He pointed out that the project has no other chance than to succeed to ensure the future of rail freight in Europe. ÖBB prioritizes the development of innovative technology that enhances productivity, capacity, and quality in daily rail freight operations. The **Digital Automatic Coupler (DAC) stands as crucial facilitator for Full Digital Freight Train operations (FDFTO)**, promising significant benefits for the sector's efficiency and effectiveness. Combined with IT developments for a seamless planning, operation and management of rail services, these new technologies will pave the way for a competitive and reliable rail freight system.

Paolo Pagliero, VP of Transit Engineering at Wabtec Corporation, and Vice-Chairman of the FP5-TRANS4M-R Steering Group pointed out the **relevance of teamwork in this highly complex and demanding project**. The strong collaboration of all partners will enhance tackling challenges ahead for example on locomotive topics.

Javier Ibáñez de Yrigoyen, representing Europe's Rail Joint Undertaking, explained that **FP5-TRANS4M-R plays a crucial role in Europe's Rail Joint Undertaking** as it works towards the goals of the **European Green Deal** through **augmenting the modal split of rail** in European freight.

Molley Williams, FP5-TRANS4M-R Flagship Project Manager, emphasized the **importance of the common target of the project** to transform Europe's Rail Freight. FP5 aims at merging different technical enablers to be developed into an **interconnected system of systems**.

Thematic sessions gave a detailed insight into the focus topics of FP5-TRANS4M-R

The technological development of Digital Automatic Coupling (DAC) as well as the **progress on Train Functions for FDFTO** was presented and discussed by FP5 representatives in the first session. After the successful finalization of Technical Specifications for DAC in early 2024 the couplers of the four suppliers Dellner, Knorr-Bremse, Voith and Wabtec are being **tested with respect to functionality, interoperability and reliability in operatio**n. This enabled the progress on the relevant standardisation works, e.g., on DAC.

The second session focused on **testing and demonstration of DAC/FDFTO technology and yard automation** as well as the strategy for authorization in Europe. As planned, the tests in the Train Test Lab and one of the Demonstrator trains are already running while the others are in preparation. Excessive testing is key for authorisation and implementing the technology. Thus, FP5-TRANS4M-R has defined **three levels of testing and demonstrations**: 1.) Testing of FDFTO technology in laboratories of suppliers 2.) Testing of FDFTO Technology on up to 100 rail freight vehicles in a restricted area – esp. in the so-called train test lab close to Berlin 3.) Various demonstrator trains in Sweden, Switzerland, Austria, and Italy as well as demonstrators for yard automation in Austria and the Netherlands. The **results of all the testing will lead to mature and sound specifications**, which are together with the respective assessment methods key to a successful authorisation, both for the foreseen Pre-Deployment Trains, and later for the mass roll out. To enable a smooth and effective authorisation of DAC equipped locomotives and wagons the European Agency for Railways (ERA) already set up a dedicated workgroup together with EU-Rail, the sector and the support of the European Commission.

In session three the position of FP5-TRANS4M-R within the European context was highlighted. The panellists examined the **collaboration with the System Pillar, the European DAC Delivery Programme (EDDP), the European Agency for Railways (ERA)** as well as the European Standardisation Organisations. First harmonised operational procedures developed in FP5, sounded with EDDP and other external stakeholders in cooperation with the System Pillar show the strong and necessary alignment with the railway sector. Another milestone is the **Standardisation and TSI Input Plan (STIP)** to bring the project results into the necessary standards.

In the field of **Innovative Freight Assets** there are currently two demonstrators being prepared: one for a **multimodal hydrogen transport container** and another for **aerodynamics and efficient driving strategies**. For the first topic, preparatory tasks like design and simulations are about to finish and to proceed to the actual demonstrations. For the second one, the data being gathered will lead to algorithms and testing.

The final session covered the project cluster **Seamless Rail Freight.** Main activities within Seamless Freight are the development of technology and the implementation of standards for the **optimisation of planning and operational processes** in terminals/yards and their connection to the main lines, standardised European checkpoints, intermodal prediction systems and an

improved integration of rail in multimodal transport chains. Through the collaboration of different stakeholders in the cluster like customers, shippers, and intermodal operators the goals of the cluster could be translated into an agreed set of specifications end of 2023. The actual development of the solutions has started in 2024 and will lead to showcasing these solutions in 2025 and 2026.

Conclusions of the Midterm Plenary Event

The midterm plenary marks the **halftime of the Flagship Project 5 TRANS4M-R**. This opportunity was seized to present intermediate results to external stakeholders and gather with the FP5 partners in person. The participation of stakeholders like the European Commission, the Europe's Rail Joint Undertaking, and the System Pillar showed the interest in FP5-TRANS4M-R and its relevance for the future of rail freight. There are **high sector expectations towards FP5-TRANS4M-R delivering deployable technology and results**. All FP5-TRANS4M-R partners, their affiliated entities and all associated partners will keep up the good work and continue the joint efforts towards transforming Europe's Rail Freight. We thank our partner ÖBB for hosting the event and Jens Engelmann (railiable), the Co-Programme Manager of EDDP, for moderating the event.

FP5-TRANS4M-R at a glance: Transforming Europe's Rail Freight

FP5-TRANS4M-R's overall goal is to **establish rail freight as the backbone of a low-emission, resilient European logistics chain** which fulfils end-user requirements to full satisfaction. Three technological clusters, 'Full Digital Freight Train Operation (FDFTO)', 'Seamless Freight Operation' and 'Innovative Freight Assets' will develop, validate, and demonstrate FP5-TRANS4M-R technologies, in line with an integrated cross-sector systemic approach. Integrating Digital Automatic Coupler (DAC)-enabled solutions with software defined systems and digital rail services will ensure increased capacity, higher throughput and swifter transportation. It will strengthen the cross-border coordination and cooperation between rail infrastructure managers and deliver optimised rail network management. FP5-TRANS4M-R's seamless, integrated, interoperable, validated and EU-wide authorised solutions aim to achieve a single EU rail freight technology framework with strictly managed interfaces for effective system integration and seamless operation across borders, actors, and modes. These objectives represent the foundations, framework and motivation behind the project which will have a significant impact on the EU transport and logistics sector.

FP5-TRANS4M-R brings together **76 partners from across the rail sector** including end-users, industrial partners, railway undertakings, operators, wagon keepers, SMEsm and academia. The project will deliver on the rail freight sector's commitment to **increasing the modal split share to 30% by 2030**, revoking the causality between economic growth in Europe and pollution and having a positive impact on European citizens' quality of life.

Follow our hashtags on LinkedIn to stay up to date about the project and visit our website for more information:

#dac #fp5 #transformingrailfreight #EU_Rail

https://projects.rail-research.europa.eu/eurail-fp5/

About Europe's Rail Joint Undertaking

The Europe's Rail Joint Undertaking (EU-RAIL) is the European partnership for rail research and innovation under the Horizon Europe programme (2020-2027) and the successor to the Shift2Rail Joint Undertaking. The partnership aims to accelerate research and development in innovative technologies and operational solutions. It supports EU policies and objectives for the rail sector, its competitiveness, and the European rail supply industry. EU-Rail accelerates the use of integrated, interoperable, and standardised technological innovations necessary to support the Single European Railway Area.

https://rail-research.europa.eu/

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