Press Release

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Decision taken on E-Coupler design for Digital Automatic Coupling in FP5-TRANS4M-R

The FP5-TRANS4M-R Steering Committee has adopted a decision on the E-coupler design to be uniformly applied in FP5-TRANS4M-R in February 2024. This approach has now been endorsed by the European DAC Delivery Programme (EDDP), both by the EDDP Programme Board in April 2024 and the EDDP Supervisory Board in July 2024.

The selection of an E-Coupler design marks a major milestone towards the interoperability of the DAC in Europe improving the overall performance of rail freight transport through increased capacity, higher throughput, and shorter transportation duration.

The E-Coupler is the crucial component of the DAC that ensures energy supply as well as data and communication solution in all wagons and locomotives of the Full Digital Freight Train (FDFT). **The E-Coupler is the component that really makes the DAC digital** as it enables automation and digitalization with software defined systems and digital rail services.

Thorough test campaign following a transparent selection process

This decision is the result of a **transparent process** that started in autumn 2023 with the definition of selection criteria by an operator's expert group and agreed by the E-Coupler manufacturers. The criteria were focused on technical aspects on one hand and life-cycle costs on the other hand. In a **thorough four-month test campaign** the E-Couplers were tested in FP5-TRANS4M-R (Train Test Lab and Swiss Demonstrator Train), the DAC4EU train and the manufacturer's test benches.

The testing campaigns concerned the prototypes for **two different E-Coupler designs** presented by the FP5-TRANS4M-R participating manufacturers **J.M. Voith SE & Co. KG** and **Knorr-Bremse Systeme für Schienenfahrzeuge GmbH**. Both designs achieved a **high equal evaluation in their technical assessment** which emphasizes the high innovative strength of the manufacturer's in FP5-TRANS4M-R. The cost assessment showed a slight **advantage for the E-coupler design of J.M. Voith SE & Co. KG**. Therefore, the operator's expert group recommended this design and the FP5-TRANS4M-R Steering Commitee followed their recommendation.

In the next phase a comprehensive safety and security concept will be developed including a thorough risk analysis. The chosen E-Coupler design will be the basis for standardization of interfaces in the relevant Technical Specifications for Interoperability via the relevant review processes of the European Railway Agency.

The FP5-TRANS4M-R Steering Committee specifically thanks all engineers from J.M. Voith SE & Co. KG and Knorr-Bremse Systeme für Schienenfahrzeuge GmbH that were involved in the E-Coupler development for their excellent work. Both manufacturers have proven their competence in E-couplers and can boost further development.

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, SMEs 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.

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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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