

Newsletter #5/2026



A Strong Foundation for the Future

After 46 months of close collaboration, FP1 MOTIONAL Wave 1 is drawing to a close. Together, we have laid important foundations for a more interoperable, resilient and digitally enabled European railway system—one capable of adapting capacity, improving planning and operations, and integrating passenger and freight services across borders.

Our Final Event offered an opportunity to reflect on these achievements, while InnoTrans in Berlin will allow us to continue showcasing them to a wider audience. Yet this is not the end of the journey. The work will continue in Wave 2, building on our results through further vital research. My sincere thanks to everyone who has contributed.

Lars Deiterding, HaCon

Content

1. FP1 MOTIONAL Final Event showcases the future of European rail
2. Successful tests demonstrate real-time communication for autonomous rail operations
3. Virtual Demonstrations at the Information Point at InnoTrans
4. Overview of Partners Stands at the Fair
5. Research Set to Continue in a New European Project

FP1 MOTIONAL Final Event showcases the future of European rail

On 30 June, FP1 MOTIONAL brought together experts and stakeholders from across Europe for its online Final Event. Broadcast from studios in Stockholm, Paris, Madrid and Salerno, the event presented the achievements of the project's first wave and explored how its results can contribute to a more integrated, digital and efficient European railway system.



Roberto Maiorana, Director General, Trafikverket

The event opened in Stockholm, where Roberto Maiorana, Director-General of the Swedish Transport Administration, highlighted the strategic importance of European collaboration. A well-functioning transport system is essential to Europe's cohesion, security and competitiveness, he emphasised, while challenges related to climate, safety and security do not stop at national borders. Cooperation through Europe's Rail enables infrastructure managers, industry and researchers to develop interoperable solutions and accelerate the practical application of digital technologies.



Giorgio Travaini, Executive Director, Europe's Rail Joint Undertaking

Giorgio Travaini, Executive Director of Europe's Rail Joint Undertaking, reinforced this message, explaining that Europe's Rail is not simply addressing isolated problems but developing solutions that can work across the entire European network. Digitalisation is a key enabler, but it must be implemented in a coordinated way. The challenge now is to build on successful demonstrations and bridge the gap between research and market deployment.



Lars Deiterding, Coordinator Executive Director

FP1 Coordinator Lars Deiterding placed the project's achievements in the context of a cross-border passenger journey and freight movement. Long before a passenger boards a train or a container begins its journey, numerous interconnected processes must take place: network and timetable planning, capacity allocation, real-time traffic management, disruption handling and data exchange. FP1 MOTIONAL has addressed these processes as parts of one integrated system.

The technical programme showcased results from five interconnected areas. Cross-Border Operations demonstrated solutions for linking national capacity and traffic management systems. Intelligent Planning presented advanced algorithms, optimisation methods and simulation tools that can help planners evaluate more scenarios and make better-informed decisions. Real-Time Intelligence explored how improved information flows and decision support can enable faster responses to disruptions.

Seamless and Inclusive Mobility focused on making multimodal journeys easier and more accessible for passengers, while Digital Foundation demonstrated the data models, digital twins, data spaces and security arrangements needed to support the railway's digital transformation. Together, these areas illustrated how individual innovations can become the building blocks of a coherent European rail ecosystem.

Throughout FP1 MOTIONAL, 94 partner organisations have worked together on around 84 demonstrations. The project has shown that collaboration between infrastructure managers, railway undertakings, suppliers, research organisations and public institutions can overcome technical, organisational and national boundaries.

The Final Event also looked ahead. Many solutions have reached high levels of technical maturity, but further testing, standardisation and alignment will be needed before widespread

implementation. This work will continue through the subsequent waves of FP1 MOTIONAL, with greater emphasis on integrated demonstrations and deployment in operational environments.

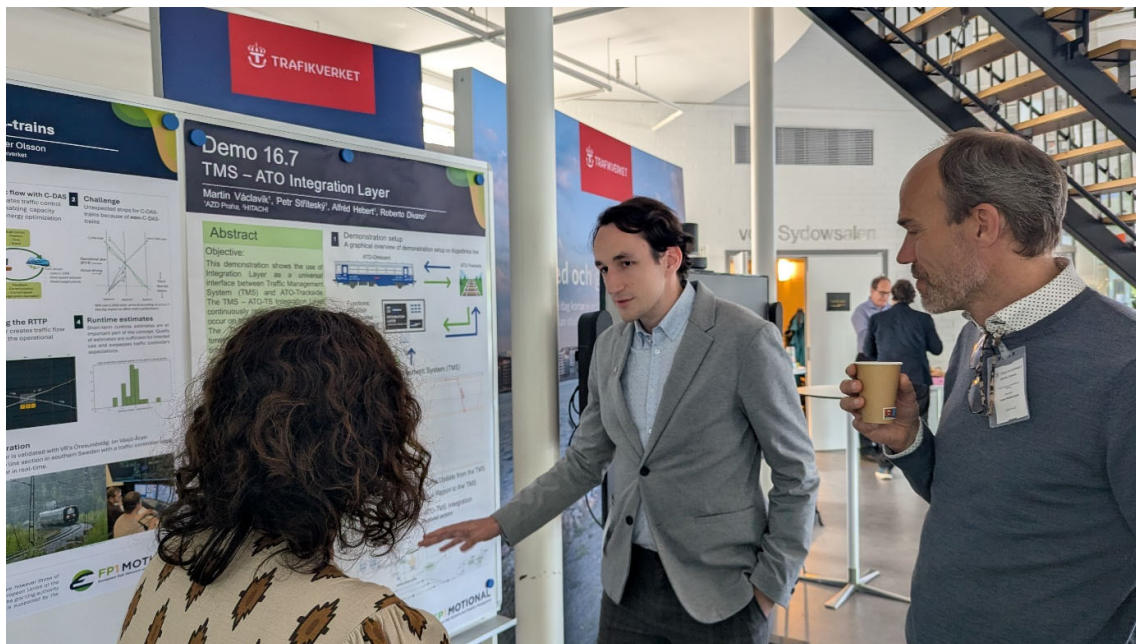
The central message was clear: the first wave may be ending, but the journey continues. By maintaining momentum and working together as a European rail community, the sector can turn research results into tangible benefits for passengers, freight customers and society.

Michel Gabrielsson, Trafikverket

Watch the recording of the FP1 MOTIONAL Final Event [HERE](#)

Successful tests demonstrate real-time communication for autonomous rail operations

FP1 MOTIONAL partners have successfully demonstrated bidirectional communication between a Traffic Management System (TMS), Automated Traffic Operation (ATO) trackside and ATO onboard equipment through the Integration Layer. The trial showed how information can move continuously between the trackside and the onboard, enabling operational updates to be translated into an adjusted timetable and communicated directly to the vehicle.



Testing took place on the Kopidlno – Dolní Bousov experimental line of AZD Praha in Central Bohemia, Czech Republic, using an autonomous experimental vehicle. During the tests, the train operated at GoA3/4. Under normal operating conditions, the partners monitored the exchange of messages between the TMS, the integration layer and the ATO components. They then introduced disruptive scenarios to assess how effectively the system could respond.

One scenario involved a simulated delay due to technical reasons. Once the disruption had been resolved, the TMS sent an updated departure time through the Integration Layer to the ATO Trackside and then to the ATO Onboard system. The team also simulated an unexpected platform change at the destination station. The journey profile was successfully updated, including the change from track 1 to track 5 and the corresponding track-segment information.

The technical performance was encouraging. Average message-processing time remained comfortably below the demonstration internal target of 100 milliseconds. Communication between the systems was therefore almost instantaneous. Some internally defined performance indicators require further investigation, but the overall test confirmed that the Integration Layer can provide a feasible basis for connecting traffic management and automated train operation.

The results underline the importance of TMS–ATO communication for future autonomous railway operations. Further work should focus on real-time optimisation and continued standardisation of interfaces between ATO and traffic management systems.

Martin Václavík, AŽD Praha s.r.o.

Virtual Demonstrations at the Information Point at InnoTrans

FP1 MOTIONAL will have a strong presence at InnoTrans 2026 in Berlin. To ensure that you do not miss any of the groundbreaking research being showcased, we are delighted to present an overview of the project's virtual demonstrations at the Europe's Rail Joint Undertaking stand.

Here, you can discover what will be presented, when the sessions will take place and where to find us throughout the exhibition.

Several of our videos will be shown on a central screen at Hall 4.2, Stand 260. You can also view some of them [HERE](#) alongside other videos.



FP1 MOTIONAL at InnoTrans

Schedule at the European Stand

HALL 4.2 · STAND 260

INFO POINT · HALL 4.2 · STAND 260

TUESDAY 22 SEPTEMBER

10:30

Timetable and capacity simulation of new
DATO technologies in signalling and train
operation + Business case results

SPEAKER

Alwin Pot · ProRail
David Koopman · ProRail
Augustin ARACHTINGI · SNCF

11:30

Demo Cross-Border TMS/CMS

SPEAKER

Lars Deiterding · HaCon

13:00

Decision Support for Coordinated
Operations in Malmö Freight Yard

SPEAKER

Magnus Wahlborg · Trafikverket

13:30

Seamless & Inclusive Mobility

SPEAKER

Enrique Jiménez · Indra

AFTERNOON PROGRAMME

15:30

The European Digital Foundation:
Insights in Rail Data Space

SPEAKERS

Isabelle Tardy · Norwegian Railway Directorate
Svenja Hainz · DLR

16:30

Algorithms for rolling stock stabling

SPEAKERS

Dennis Huisman · NS
Ramon Lentink · NS
Jord Boeijink · NS
Sam Hesselmans · NS

Come and listen to FP1 MOTIONAL presentations at the Europe's Rail Joint Undertaking Stand. [HERE](#)

FP1 MOTIONAL at InnoTrans

Schedule at the European Stand

HALL 4.2 · STAND 260

INFO POINT · HALL 4.2 · STAND 260

WEDNESDAY 23 SEPTEMBER

09:30

Timetable and capacity simulation of new DATO technologies in signalling and train operation + Business case results

SPEAKER

Alwin Pot · ProRail
David Koopman · ProRail
Augustin ARACHTINGI · SNCF

11:00

Demo Cross-Border TMS/CMS

SPEAKER

Lars Deiterding · HaCon

12:00

Algorithms for rolling stock stabling

SPEAKERS

Dennis Huisman · NS
Ramon Lentink · NS
Jord Boeijink · NS
Sam Hesselmans · NS

13:00

Seamless & Inclusive Mobility

SPEAKER

Enrique Jiménez · Indra

AFTERNOON PROGRAMME

15:00

The European Digital Foundation: Insights in Digital Twin Environments

SPEAKERS

Isabelle Tardy · Norwegian Railway Directorate
Svenja Hainz · DLR

16:00

Decision Support for Coordinated Operations in Malmö Freight Yard

SPEAKER

Magnus Wahlborg · Trafikverket

Come and listen to FP1 MOTIONAL presentations at the Europe's Rail Joint Undertaking Stand. [HERE](#)

FP1 MOTIONAL at InnoTrans

Schedule at the European Stand

HALL 4.2 · STAND 260

INFO POINT · HALL 4.2 · STAND 260

THURSDAY 24 SEPTEMBER

09:30

Timetable and capacity simulation of new DATO technologies in signalling and train operation + Business case results

SPEAKER

Alwin Pot · ProRail
David Koopman · ProRail
Augustin ARACHTINGI · SNCF

10:30

Demo Cross-Border TMS/CMS

SPEAKER

Lars Deiterding · HaCon

11:30

Decision Support for Coordinated Operations in Malmö Freight Yard

SPEAKER

Magnus Wahlborg · TRV

12:00

Seamless & Inclusive Mobility

SPEAKER

Marco Ferreira · Hacon

13:00

Algorithms for rolling stock stabling

SPEAKERS

Dennis Huisman · NS
Ramon Lentink · NS
Jord Boeijink · NS
Sam Hesselmans · NS

14:00

Digitalised Planning Data with co-simulation and digital twins

SPEAKERS

Isabelle Tardy · NRD
Svenja Hainz · DLR

Come and listen to FP1 MOTIONAL presentations at the Europe's Rail Joint Undertaking Stand. [HERE](#)

Overview of Partners Stands at the Fair

Some of FP1 MOTIONAL's partners have their own stands at InnoTrans. You can find them in the overview presented here.

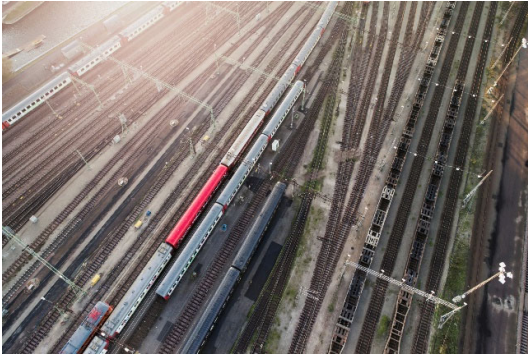
INNOTRANS 2026 Partner Booths & Results Shown		
PARTNER	BOOTH INFO	RESULTS TO BE PRESENTED
Alstom	Hall 3.2, booth 450	"Expert talk" about Europe's Rail – 23 Sept at 10 with Stephane Feray-Beaumont (Innovation director at Alstom) and Giorgio Travaini.
AŽD	Hall 27, Stand 640	ATO-TMS Integration Conflict Detection
Deutsche Bahn	CityCube Hall B, Booth 410 & Outdoor displays	
DLR	Hall 2.2., Stand 440 Ca. 120 m²	Planning of regional lines offer, remote train operation, digital twin for running gear and maintenance, cyber-security
INDRA	Hall 4.1. Stand 610	
Knorr Bremse GRH	Hall 1.2 Booth 250	Rail Data Space
Siemens Mobility	Hub 27, booth 230	
SNCF Réseau	Hall 5.2 stand 250	Thematic breakfast on Tuesday 22/09 between 9 and 10h about «Digital Continuity and Europe's Rail».

Research Set to Continue in a New European Project

The journey towards a more integrated, efficient and competitive European railway system is set to continue through FP1-MOTIONAL-2, a new research project building on the achievements of FP1 MOTIONAL.

The 30-month project is expected to bring together 29 railway companies, operators, infrastructure managers, organisations and universities, all contributing their own research funding in addition to EU support. A further 22 research organisations are expected to participate with full funding.

Improving the planning and operational management of rail services will be essential if rail is to become the preferred mode of transport in Europe. FP1-MOTIONAL-2 aims to support this



ambition by developing functional requirements, specifications, and integrated operational and technological solutions for network planning and control, as well as multimodal mobility management. The solutions will be demonstrated.

Digitalisation will play a central role in making rail the backbone of a multimodal transport system for both passengers and freight. A key priority will be to integrate solutions developed within FP1 MOTIONAL into a coherent and

interoperable system, contributing to establish a shared, future oriented European Traffic Management layer.

By moving beyond isolated pilot initiatives towards scalable solutions with clear pathways to implementation, FP1-MOTIONAL-2 will prepare the ground for joint validation and future deployment during the third wave of Flagship Area 1.

Please check the Europe's Rail website for further information.

Magnus Wahlborg, Trafikverket

Find the Europe's Rail Joint Undertakings homepage [HERE](#).



Funded by the European Union. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or the Europe's Rail Joint Undertaking. Neither the European Union nor the granting authority can be held responsible for them. The project 'FP1-MOTIONAL' is supported by the Europe's Rail Joint Undertaking and its members.