Cost-Efficient and Reliable High-Capacity Infrastructure

Final Event

This project has received funding from the Shift2Rail Joint Undertaking under the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101012456
IN2TRACK-3
Final Event
Europe’s Rail Joint Undertaking
30/11/2023

Sébastien DENIS
Senior Programme Manager
Europe’s Rail JU
On what EU-Rail is built upon

Shift2Rail R&I programme

- **IP1** Cost-efficient and Reliable Trains, including high-capacity trains and high speed trains
- **IP2** Advanced Traffic Management and Control System
- **IP3** Cost-efficient, Sustainable and Reliable High Capacity Infrastructure
- **IP4** IT Solutions for Attractive Railways Services
- **IP5** Technology for Sustainable and Attractive European Rail Freight
- **CCA** Cross Cutting Activities

- **28** MEMBERS
- **412** PARTICIPANTS
- **29** COUNTRIES
- **109** SMEs
- **113** RESEARCH CENTRES AND UNIVERSITIES

Total Spending: **€ 920 MILLION**

- **2015** - € 52 M
- **2016** - € 168 M
- **2017** - € 112 M
- **2018** - € 153 M
- **2019** - € 150 M
- **2020** - € 152 M (yet to be awarded)

19 TOPICS, 3 TENDERS & 1 PRIZE
IP3: Cost-Efficient and Reliable High-Capacity Infrastructure
Exploitation of results in EU-RAIL

- TD3.1
- TD3.2
- TD3.3
- TD3.4
- TD3.5

FP3 - IAM4RAIL
FP6 - FUTURE
The first EU-Rail flagship projects

**FP6: FUTURE**
Innovative rail services to revitalise capillary lines and regional rail services
Value: EUR 32.9 million
Partners involved: 50
Duration: 48 months

**FP5: TRANS4M-R**
Transforming Europe’s rail freight
Value: EUR 95.1 million
Partners involved: 71
Duration: 45 months

**FP4: RAIL4EARTH**
Sustainable and green rail system
Value: EUR 95.1 million
Partners involved: 71
Duration: 48 months

**FP3: IAM4RAIL**
Holistic and integrated asset management for Europe’s rail system
Value: EUR 106.9 million
Partners involved: 94
Duration: 48 months

**FP1: MOTIONAL**
Mobility management in multimodal environment and digital enablers
Value: EUR 92.6 million
Partners involved: 88
Duration: 46 months

**FP2: R2DATO**
Rail to digital automated up to autonomous train operation
Value: EUR 160.8 million
Partners involved: 76
Duration: 42 months
EU-Rail expected system impacts

- Meeting evolving customer requirements
- Improved performance and capacity
- Reduced costs
- More sustainable and resilient transport
- Harmonised approach to evolution and greater adaptability
- Reinforced role for rail in European transport and mobility
- Improved EU rail supply industry competitiveness
Flagship projects

### EU-Rail Call 2023
**Opening:** 4 October 2023; **Deadline:** 7 February 2024

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<th>DESTINATION Topics</th>
<th>Type of Action</th>
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HORIZON-ER-JU-2023-EXPLR-04: DISRUPTIVE ASSETS MANAGEMENT SOLUTIONS, INCLUDING URBAN USE CASES

Research and Innovation Action – **TRL4/5**
Budget : **2.7M€**

**Expected outcome:**
Three innovative demonstrators of innovative
- assets monitoring solutions and/or
- inspections solutions and/or
- remotely controlled interventions solutions.
Among the proposed demonstrators, at least two urban specific use cases (metro/tramway/…) shall be addressed.
HORIZON-ER-JU-2023-EXPLR-01: NOISE AND VIBRATIONS

Research and Innovation Action  – TRL5/6

Budget : 4.1M€

Scope of R&I activities:

**Noise :**
- On-board measurements of the rail acoustic roughness
- Rail optimisation for noise, vibrations, and life cycle costs
- Noise in curves
- Transposition and uncertainties of pass-by noise

**Vibration :**
- Ground vibrations Prediction Tool
- Requirements and specifications for ground-borne vibration emission of rolling stock
Thank you for your attention!

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B1060, Brussels - Belgium

www.rail-research.europa.eu
Example: 3MB SlabTrack

Image rights: Acciona Construcciones SA
In2Track3 Europe in visual demonstrators
What do we leave for the future?
From: In2Track3
To: The Future
The ATMO for improved grinding in cities
Improved maintenance through the EMAT trolley
Smart Material for measuring rail health
The 3MB slab track for easier maintenance
Possibly new ways to separate damage slab tracks
The optimised cast manganese frog
The Discrete Defect Repair technique to weld cracks
The ROUV for detection of scour
A new method for repairing brick-lined tunnels
An autonomous tunnel drainage rover
Improved repair methods through laser cladding
A new type of tramway crossing
...and much, much more...
So how have we shown our results?
Concluding technical report

Project documentation – not a scientific report