

Rail Research and Innovation to Make Rail the Everyday Mobility



Europe's Rail Joint Undertaking (EU-Rail) is the European partnership on rail research and innovation established under the Horizon Europe programme. EU-Rail, along with its 26 Founding Members, delivers results that will contribute to the EU Sustainable and Smart Mobility Strategy, as well as the Single European Railway Area, to a transition to a more attractive, user-friendly, competitive, affordable, efficient and sustainable European rail system. The partnership aims to accelerate research and development in innovative technologies and operational solutions, fostering cooperation and ensure coordination with related European, national and international research, innovation, deployment and investment activities in the rail sector and beyond.

Vision:

To deliver, via an integrated system approach, a high capacity, flexible, multi-modal, sustainable and reliable integrated European railway network by eliminating barriers to interoperability and providing solutions for full integration, for European citizens and cargo.

Objectives:

- contribute towards the achievement of the Single European Railway Area;
- ensure a fast transition to more attractive, user-friendly, competitive, affordable, easy to maintain, efficient and sustainable European rail system, integrated into the wider mobility system;
- support the development of a strong and globally competitive European rail industry.

Impact:

- 🕒 Meeting evolving customer requirements
- 🚂 Improved performance and capacity
- 📦 Reduced lifecycle costs
- 🌿 More sustainable and resilient transport
- 🔄 Harmonised approach to evolution and greater adaptability
- 🚆 Rail as the backbone of European transport and mobility
- 🏆 Improved EU rail supply industry competitiveness

One Integrated Research & Innovation Programme

EU-Rail acts as a rail R&I hub bringing together the rail sector and is entrusted to manage and deliver one integrated Rail Research and Innovation Programme, built around two main pillars interdependent to each other and the Deployment Group.



System Pillar brings all rail sector representatives under a single coordination body. Provides the governance and resource to support the sector in converging on the evolution of the rail system and lays out the operational concept, system architecture, and associated specifications and standards to achieve it.



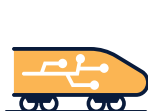
Innovation Pillar delivers innovative technological and operational solutions for services of the future, through flagship projects, large-scale demonstrations and exploratory and fundamental research and innovation.



Deployment Group ensures that future solutions are deployed in a coordinated and consistent way at European level, taking into account alternative rollout scenarios, behavioural and organisational changes, and synergies with other modes of transport.



Priority Areas & Exploratory Research



European Rail Traffic Management and Digital Enablers



Competitive Digital Green Rail Freight










Digital & Automated up to Autonomous Train Operators



Smart Solutions for Low Density Traffic Lines



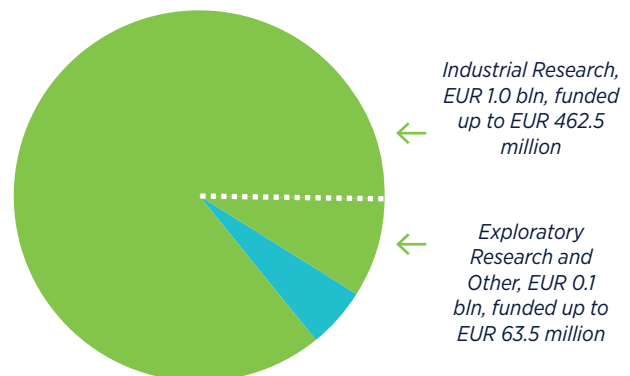
Sustainable and Digital Assets

Innovation Pillar	2021 – 2031 (in EUR million)	Multi Annual Call 2022 (in EUR million)
 Flagship Area 1: Network management planning and control & Mobility Management in a multimodal environment & Transversal Topics: Digital Enablers	173.7	87.4
 Flagship Area 2: Digital & Automated up to Autonomous Train Operations	251.9	121.5
 Flagship Area 3: Intelligent & Integrated asset management	217.4	104.2
 Flagship Area 4: A sustainable and green rail system	169.2	89.7
 Flagship Area 5: Sustainable Competitive Digital Green Rail Freight Services	136.3	95.5
 Flagship Area 6: Regional rail services / Innovative rail services to revitalise capillary lines	82.3	37.7
 Flagship Area 7: Innovation on new approaches for guided transport modes	15.7	7.3
Total	1046,5	543,3

Budget

The total value of the Programme is estimated at EUR 1.2 bln:

- **System Pillar: EUR 58.8 million, funded up to EUR 50.0 million**
- **Innovation Pillar: EUR 1.1 bln**



Bringing benefits to EU economy and society



Economic/technological impacts

- An increase in rail's modal share of passenger and freight markets
- An improvement in the competitiveness of the RSI
- An increase in rail industry direct and indirect employment
- Creation of new business models and opportunities for the rail stakeholders



Societal impacts

- Reductions in the environmental impacts of transport
- Improvements in the safety, security and health of EU citizens
- Affordable and accessible mobility and connectivity



Scientific impacts

- A strengthened pipeline of potential innovation available to the rail sector
- Deliver scientific results breaking down the current operating limitations
- Development of the knowledge base
- A new generation of "rail" engineers and scientists coming from different fields