



R&I ACTIVITIES



UNIFE has an extensive and diverse experience with European research and innovation (R&I) projects. During our 33 years of operating in Brussels, this association has served as both an advocate for increased EU funding for rail research and as a partner and coordinator of dozens of projects dealing with various railway subsystems such as rolling stock, infrastructure, signalling, energy, freight and more. We are actively involved in the **European Rail Research Advisory Council's** (ERRAC) secretariat, our sector's European Technology Platform and a trusted partner of the **European Commission**.



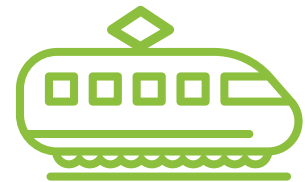
Based on the successes of Shift2Rail, UNIFE advocated for the establishment of its successor – now known as the **Europe's Rail Joint Undertaking** (EU-Rail) - within the framework programme for Research & Innovation **Horizon Europe** 2021-2027. EU-Rail was officially launched at the end of 2021, with a budget of roughly €1,2 billion. At the present, 12 UNIFE members are involved in the Joint Undertaking as Founding Members.

510 992 345 €

Total value of European rail R&I projects with UNIFE involvement since 2002

Regarding rail R&I, UNIFE seeks to:

- ▶ **Advocate** for sufficient European funding for collaborative research
- ▶ **Advise** members on all European Level R&I opportunities, including providing relevant information on Horizon Europe, Europe's Rail and other R&I programmes concerning for instance satellite technologies, batteries, cybersecurity and digital applications
- ▶ **Coordinate** EU R&I projects essential for the European Rail Supply Industry
- ▶ **Facilitate** discussions between stakeholders interested in setting up consortia
- ▶ **Represent** the rail industry within ERRAC and foster communication between members and railway undertakings, infrastructure managers and academia



EU R&I

94 M €

Total Value of UNIFE R&I projects with the participation of UNIFE since 2014



27

Number of R&I projects where UNIFE is involved



16

Number of R&I projects coordinated by UNIFE



73%

UNIFE success rate (proposals selected/ proposals submitted) since 2014



UNIFE R&I PROJECTS



CLUG 2.0 (CLUG Demonstration of Readiness for Rail) is a project funded by EUSPA which continues the activity started in the CLUG project. The main objective remains the same as the one identified in CLUG, which is the development and demonstration of absolute safe train positioning by applying the existing and future European Global Navigation Satellite System (GNSS) and the European Geostationary Navigation Overlay Service (EGNOS) and multi-sensor functionality for train localization.

<https://www.clug2.eu>



DACcord project is the continuation of the DACcelerate project, with updated goals still under the framework of the European DAC Delivery Program (EDDP). The overall goal of the DACcord project is to support Europe's Rail Joint Undertaking in the preparation of the migration and implementation of DAC in Europe.

<https://rail-research.europa.eu/european-dac-delivery-programme>



DAYDREAMS (Development of prescriptive Analytics based on Artificial Intelligence for iAMS) is a project within Shift2Rail's 3rd Innovation Programme (IP3). It started its activities in December 2020.

<https://daydreams-project.eu>



The **GEARBODIES** project, which started in December 2020, seeks to develop new methods and technology for the inspection of new materials in carbody applications, as well as to employ innovative approaches for developing novel concepts with enhanced lifetimes for key running gear components.

<http://www.gearbodies.eu>



IN2ZONE (The next generation of railway transition zones) is a Shift2Rail Innovation Programme 3 (IP3) project that seeks to enable infrastructure to boost the economic viability, sustainability and resilience of the European rail network.

<https://in2zone.eu>



IP4MAAS is a project under S2R JU's 4th Innovation Programme (IP4). The project was launched in December 2020. IP4MAAS will assist IP4 projects in demonstrating the technologies at an unprecedented level at 6 different locations in Europe and with the cooperation of more than 10 transport operators.

<https://www.ip4maas.eu>



NEXTGEAR (NEXT generation methods, concepts and solutions for the design of robust and sustainable running GEAR) is a Shift2Rail Innovation Programme 1 (IP1), which saw its activities commence in December 2019.

<https://nextgear-project.eu>



OPTIMA (Communication Platform for Traffic Management Demonstrator) is a Shift2Rail Innovation Programme 2 (IP2) project began its work in December 2019.

<https://www.optima-project.eu>



RAILGAP (RAILway Ground truth and digital mAP) is a Horizon 2020 project that started in January 2021. It is tasked with developing innovative High Accuracy, High Precision Ground Truth and Digital Maps, essential elements of an EGNSS train positioning system and a Validation & Verification Environment.

<https://railgap.eu>



RECET4Rail (Reliable Energy and Cost-Efficient Traction system for Railway) is a project under S2R JU's 1st Innovation Programme (IP1).

<https://recet4rail.eu>



RIDE2RAIL is a project directly linked to S2R JU's 4th Innovation Programme (IP4). The project started in December 2019 and works to develop solutions and tools that will facilitate the efficient combination of ride-sharing and scheduled transport services - for example, bus and rail.

<https://ride2rail.eu>



Safe4Rail-3 (Advanced safety architecture and components for next generation TCMS in Railways) is a Shift2Rail IP1 research project that seeks, in collaboration with the Shift2Rail CONNECTA-3 project, to increase the flexibility and reliability of the Train Control and Monitoring System (TCMS) communications.

<https://safe4rail-3.eu>



SILVARSTAR (SoL Vibration and AuRalisation Software Tools for Application in Railways) is a 2-year collaborative project that fits into the "Cross-Cutting Activities" category of Shift2Rail.

<https://silvarstar.eu>



STREAM (Smart Tools for Railway work safety and performance improvement) is a S2R JU IP3 project dedicated to delivering a resilient, consistent, cost-efficient and high capacity European rail infrastructure.

<https://streams2r.eu>



TRANSIT (TRAIN pass-by Noise Source characterization and separation Tools for cost-effective vehicle certification) is a research and innovation project being conducted within the wider S2R JU's "Cross-Cutting Activities".

<https://transit-prj.eu>



5GRAIL is a Horizon 2020 EU-funded project that consists of eight Work Packages and was organised to validate the first Future Railways Mobile Communication System (FRMCS) specifications by developing and testing prototypes for the technology's ecosystem on both trackside infrastructure and on-board use.

<https://sgrail.eu>

Learn more about our research activities from our website!

UNIFE - The European Rail Supply Industry Association

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www.unife.org/activities/research

