UNIFE: Experience on Shift2Rail Open Calls
ERRAC: RAIL 2030 R&I Priorities – Towards Shift2Rail 2

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UNIFE is the European Association of train-builders and rail equipment suppliers

A unique network of over 100 member companies from all over Europe and of all sizes (1/3 of SMEs) and 14 National Associations

World leaders: UNIFE members have a 84% market share in Europe and supply 46% of the worldwide rail production
Shift2Rail: UNIFE’s support to UNIFE members

UNIFE’s current and future role in Shift2Rail

UNIFE is proactively involved in the annual Open Calls and will continue to support its members by playing three crucial roles:

- **Info-Point**
  - UNIFE ensures the active involvement of its members in Shift2Rail Open Calls proposals in order to strengthen the role of the EU Rail Industry in the achievement of the SSR goals.
  - UNIFE encourages the participation of its members by offering a platform for discussion and information exchange in order to help with the preparation of their proposals.
  - UNIFE provides its members with general information (financial, administrative, etc.) to support them during the preparatory phase of the SSR Open Calls.

- **Facilitator**
  - Leaning on its significant experience in European research and its robust stakeholder network (including, for example, Operators, Infrastructure Managers, Industry, Academia, Research Institutes, EFRAC, etc.), UNIFE facilitates communication/work channels between its members and other stakeholders interested in the Open Calls.
  - On its members’ behalf, UNIFE collaborates with other key European rail sector actors for the submission of joint proposals.

- **Coordinator**
  - UNIFE will directly participate in relevant Open Calls, either as coordinator or partner and will promote the involvement of its members.
  - As coordinator, UNIFE will be responsible for the preparation and submission of the proposals with the support of the consortium partners.
  - As partner, UNIFE will contribute to the preparation of the proposals by bringing its extensive expertise.

**Total Value of UNIFE Shift2Rail Open Call and Lighthouse projects**

- **68.5M EUR**
- **20** UNIFE Members involved in Shift2Rail Open Call and Lighthouse projects coordinated by UNIFE
- **19** Shift2Rail Open Call and Lighthouse projects where UNIFE is involved
- **11** Shift2Rail Open Call and lighthouse projects **coordinated** by UNIFE
- **69%** UNIFE success rate in Shift2Rail
Shift2Rail: UNIFE’s involvement in Shift2Rail Projects

Coordination

Partner
What is ERRAC?

- The European Technology Platform for rail - was set up in 2001.
- Promotes the holistic vision of the rail system with all stakeholders.
- Aims to revitalise the European rail sector.
- Identifies business needs and innovates to make it attractive and more competitive.
- Fostering and guide research efforts at European level.
- Representatives from all the major European rail research stakeholders are gathered:

<table>
<thead>
<tr>
<th>Operators</th>
<th>Infrastructure managers</th>
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<tr>
<td>Manufacturers</td>
<td>The European Commission</td>
</tr>
<tr>
<td>EU Member States</td>
<td>Shift2Rail / ERA</td>
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<tr>
<td>Users’ groups</td>
<td>Academics</td>
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- ERRAC covers all segments of rail transport: from conventional, high speed and freight applications to urban and regional services.
ERRAC Structure

Governance
- Chairperson
- 2 Vice-Chairs
- Secretariat

ERRAC Plenary

ERRAC Steering Committee (ESC)

WG1 - Programme Group
WG2 - Projects Group
WG3 - ERRAC Comms Group
ERRAC Acad. PAG
ERRAC Member States PAG
Some ERRAC earlier outputs

Strategic Rail Research Agenda (SRRA)
May, 2007

Rail Route 2050
2012

Strategic Rail Research and Innovation Agenda (SRRIA)
November, 2014

ERRAC Roadmaps
April, 2016
ERRAC 2050 Vision in a nutshell

“In 2050, rail transport in Europe is the backbone of an intermodal “Mobility as a Service” in cities and outside for both passengers and goods, meeting the needs of EU citizens and society. The suppliers and service organisations of the European rail industry are seen as the world’s thought leaders for railway products and services.”

Rail already plays an important role in delivering economic and societal benefits in Europe.

Rail has the opportunity to contribute much more, taking advantage of technical developments.

Public support for R&D&I is necessary.

To do so, research and innovation (and other supporting elements, including appropriate regulatory structures) are vital.
Reaching the ERRAC 2050 Vision requires consideration of the stages between today and then, particularly which aspects of the vision should be delivered by each stage, as a guide to **formulating the priorities for research and innovation**. The first such stage is **the period to 2030**, the focus of this document.

The 2030 rail system **will interact with other transport modes** and with local, regional, national and European economic activities in transformational societal changes and trends.

The objective of the sector is to offer **end-users/citizens easy and seamless access to a portfolio of sustainable mobility options which have rail as their backbone**.

This document describes the priorities, which form the base for rail research and innovation, to build up the 2030 railway system.

CHALLENGES FOR THE MOBILITY OF 2030

1. ATTRACTIVENESS & CONVENIENCE
   - End-user citizen driven services (passenger & logistics)
   - Integrated door-to-door mobility
   - Minimising Journey Time. No waiting times
   - Punctual, reliable & secure
   - Comfortable & quiet
   - Affordable and tailored for all needs

2. MAXIMISED AFFORDABLE CAPACITY
   - Matching capacity with demand
   - Affordable and minimising infrastructure changes
   - Resilient transport system and quick recovery
   - Customised & Flexible: adaptable to changing needs

3. SUSTAINABILITY/SECURITY
   - Decarbonised mobility
   - Energy efficiency
   - Reducing congestion in populated areas
   - Limiting noise, vibration and ground space
   - More secure and resilient

“The rail sector addresses these challenges as the backbone of integrated mobility”

THE RAIL SECTOR’S ANSWERS TO THESE CHALLENGES (Supported by Horizon Europe)

2. DIGITALISATION
   - Connected & integrated railways
   - Intelligent & cost efficient asset management
   - Cyber-security solutions
   - End-User citizen-centric services
   - Digital control command

3. AUTOMATION
   - Real time operational management
   - Trains running closer together: Platooning & virtual coupling
   - Autonomous trains
   - Automated freight operation
   - AI & Robotics
   - Extracting value from data

4. NEW MOBILITY SOLUTIONS
   - Seamless integration between modes of transport
   - Smaller and more frequent trains
   - New types of rail transport solutions (goods & others)
   - Stations and terminals as mobility hubs

5. SUSTAINABLE SOLUTIONS
   - Green energy technologies
   - Interconnection between Energy and mobility systems
   - Apply digitalisation to energy
   - Silent railways
   - Pro-active security
   - Non-invasive inspection solutions

COST SAVINGS AND DEPLOYMENT OF INNOVATION
- Improved deployment, bottom-up transport-system standards solution, better adapted/ regulation/certification (virtual), rapid deliveries...
Integrate the Railways in a D2D Mobility Ecosystem

- Deployment of mobility service platforms
- Use of comprehensive understanding of transport markets and drivers
- Use of open data from 3rd parties to create added value
- Solutions development to anticipate and predict the status of different transport mode operations
- Use of integrated information
Intelligent Assets Lifecycle Management

- Digitalisation of the maintenance system
- Prognosis and health assessment at system level
- Specific technologies for maintenance execution
- New construction methods

AIL 2030 R&I Priorities (5/7)
Environmental sustainability and carbon free mobility

Affordable alternative propulsion

Holistic energy management approach for railways

Simulation tools and procedures to predict noise and vibrations

Procedures and techniques for recycling vehicles and eliminating polluting substances

Rail IS 9x LESS CO2 intensive than road for freight and air travel for passengers.
Transversal Enablers

- New Materials and manufacturing techniques
- Reasonable security measures
- Digital Technologies
- Telecommunication
- Cyber Security
We have a momentum – now is the time to act!

Need to get the extension of Shift2Rail in Horizon Europe following the iPPP Model!
Thank you for your attention!