



Shift2Rail and rail research within Horizon 2020

Shift2Rail Information Day for non-JU members (Open calls)

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Transport main challenges

- **GHG emissions** – climate + health impacts
- **Oil dependency** – volatile oil prices
- **Congestion** – liveability of cities
- **Infrastructure capacity** vs mobility demand
- **Urbanisation** – role of public transport
- **Demographic trends** – ageing populations
- **Global competition**

White
paper on
transport

Key challenges for rail

- Overall challenge: **strengthen the role of rail in the European transport system** to take advantage of its inherent advantages
- **Quality of service challenge**: Poor customer satisfaction
- **Cost challenge**: Reliance on **public subsidies** & **low profitability** due to product customisation, capital-intensity of investments, long product lifecycles, and long and costly authorisation procedures
- **European challenge: Fragmentation of rail markets** and diversity of national standards
- **Competitiveness challenge**: increasing **global competition** in the rail industry
- **Know-how challenge**: Technical **know-how in decline** with 30% of sector workforce retiring within next 10 years

→ What are we doing about it?

White paper on transport



Single European Railway Area



Regulatory Approaches (incl. technical standards)

Fourth Railway Package

Infrastructure policy and investment

Connecting Europe Facility

Research and Innovation Policies to complement and support the regulatory and policy approaches

Horizon 2020

Horizon 2020

- **€77+ billion** research and innovation funding programme for 2014-2020 centred around 3 major priorities
- **New approach** to EU-funded Research and Innovation (R&I), in line with Europe 2020 and the Innovation Union



Rail R&I under FP7

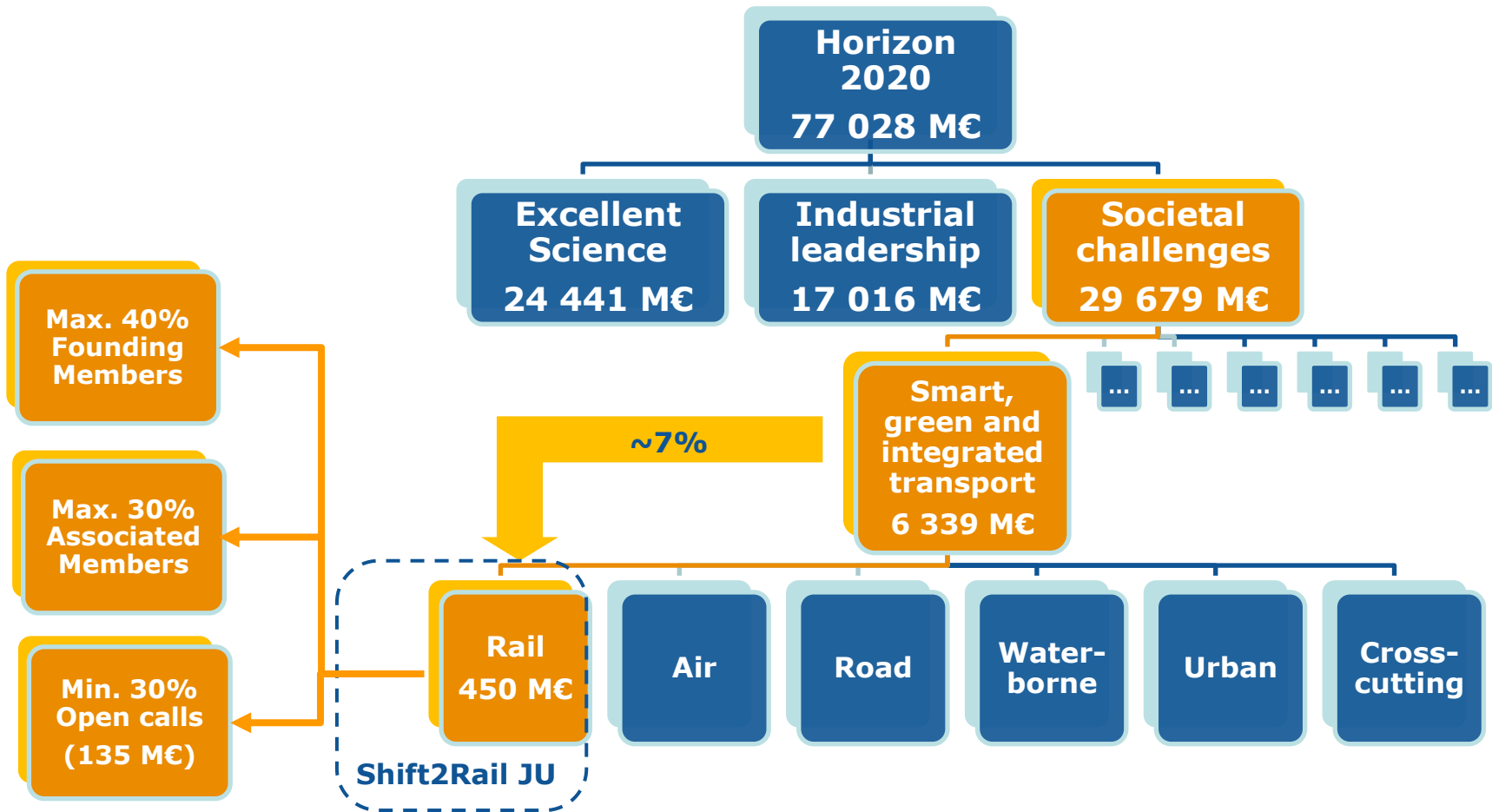
- **€155 Million** for rail research from 2007 to 2013 = **3.7%** of total budget for Transport Research
- Around **50 rail projects** (excluding cross-cutting projects)
- **Insufficient project coordination** → risk of overlaps and/or of generating uncoordinated or redundant technologies
- **Insufficient alignment with policy objectives** → limited impact
- **Lack of system-wide approach** with limited or uncoordinated participation of actors from the full rail value chain
- **Limited market uptake of innovations** with EU funding focused on pre-competitive innovation at low Technology Readiness Levels and "estranged" from market needs
- **Limited leverage effect** (30% of private funding on average)
- **SMEs** = 16% of funding



Horizon 2020 – New approach to R&I

- **Single programme** bringing together all EU funded R&I, with **simplified access** for businesses, research institutes and academia
- Linking research to innovation by providing **seamless and coherent funding from idea to market**
- **Challenge-based approach**, allowing applicants to have freedom to propose innovative solution
- **Partnership approach** (e.g. Shift2Rail Joint Undertaking) to:
 - Provide the opportunity to a **wide range of stakeholders** to develop a **coordinated and long-term vision for rail innovation**, aligned with **policy objectives, business & end-user needs**;
 - Increase the **leverage** effect of EU rail R&I funding by ensuring a **balanced contribution from all partners**,
 - Guarantee an **open, transparent, effective and efficient governance** and day-to-day management.

Horizon 2020 Funding



Rail research outside Shift2Rail

- Under H2020: **all rail-focused** research will be funded **through the S2R JU**.
- The general H2020 work programme includes "**horizontal**" / "**cross-modal topics**" that may be of interest to the railway community, in particular:
 - **Transport Work Programme** of Horizon 2020 for 2016-2017, containing 3 calls:
 - Mobility for Growth
 - Automated Road Transport
 - European Green Vehicles Initiative
 - Other relevant topics from other work programmes of Horizon 2020 (e.g. Security).

Mobility for Growth 2016-2017

Content and overview

A) Mode-specific challenges

- 1) Aviation
- 2) Waterborne

C) Cross-cutting issues

- 8) Socio-economic and behavioural research and forward-looking activities for policy making

B) Cross-modal / transport integration challenges

- 3) Safety
- 4) Urban
- 5) Logistics
- 6) Intelligent Transport Systems
- 7) Infrastructure

Examples of cross modal topics in the 2016-2017 Transport Work Programme

Although they are not necessarily designed solely as "rail-related" calls, a number of topics in the 2016/2017 transport work programme are **relevant for the rail sector**, for instance:

- MG-3.4 **Transport infrastructure innovation** to increase the transport system **safety at modal and intermodal level**
- MG-4.1 Increasing the take up and scale-up of innovative solutions to achieve **sustainable urban mobility**
- MG-5.1 Networked and efficient **logistics clusters** and all the relevant topics of the MG-5 call
- MG-6x **ITS calls**
- MG 7.1 **Resilience to extreme** (natural and man-made) events and MG 7.2 Optimisation of transport infrastructure including **terminals**

Topics in the 2016-2017 Security Work Programme with transport components

Although they are not necessarily designed solely as "rail-related" calls, a number of topics in other 2016/2017 work programme are **relevant for the rail sector**, for instance:

- CIP-01-2016-2017: Prevention, detection, response and mitigation of the combination of **physical and cyber threats to the critical infrastructure** of Europe.
- "... Transport Infrastructure and means of transportation ..."
- SEC-15-BES-2017: **Risk-based screening at border crossing**
- SEC-17-BES-2017: Architectures and organizations, **big data** and data analytics for customs risk management of the **international goods supply chain trade movements**

Date		Calls / topics
2015	15 October	Opening of 2016 calls
2016	20 January 26 January 29 September	Closing: Two-stage topics: 1st stage proposals Single-stage topics Two-stage topics: 2nd stage proposals
2016	20 September 4 October	Opening of 2017 calls: Calls Mobility for Growth & Autom. Road Transport Call Green Vehicles
2017	26 January 1 February 27 September 19 October	Closing: Two-stage topics: 1st stage proposals Single-stage topics Two-stage topics: 2nd stage proposals - call ART Two-stage topics: 2nd stage proposals - call MG

Types of actions

Actions	Participants
<p>Research and Innovation Actions (RIAs) Main focus on research</p>	<p>Consortia of min. 3 partners from 3 different countries</p>
<p>Innovation Actions (IAs) Main focus on close-to-market activities</p>	
<p>Coordination and Support Actions (CSAs) Focus on coordination and networking of R&I projects, programmes and policies</p>	<p>Single entities or consortia</p>