Track changes: Designing the future of rail travel

EU-funded researchers have just begun work on three exciting projects that could very well determine the shape of rail travel in the coming years.

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Increased traffic, congestion, security of energy supply and climate change are just some of the many pressing issues that the EU currently faces. In order to fully tackle these challenges, the railway sector must modernise and take on a larger share of transport demand over the next few decades.

To this end, three ambitious Horizon 2020 projects were launched in May 2015, with the aim of making 21st century transport as environmentally responsible, citizen-focused and globally competitive as possible. The three schemes – ROLL2RAIL, IT2RAIL and IN2RAIL – focus on different aspects of improving Europe's rail infrastructure, and will contribute to the EU's overall strategy of achieving sustainable transport that is fit for purpose.

The first of these three schemes is ROLL2RAIL, a EUR 16 million project that aims to develop key technologies to revolutionise future train design. ROLL2RAIL will assess new ways of increasing railway capacity and reducing life cycle costs of both the vehicles and the track. More specifically, the project team will examine new traction technology that could result in greater energy efficiency and less noise. Lightweight composite materials may also help to reduce weight.

The EUR 12 million IT2RAIL project meanwhile aims to ensure that long distance journeys combining rail, bus and air are better coordinated. This will be achieved through integrating travel services and digital technologies, and pushing forward an open web-based framework to encourage full service interoperability. IT2RAIL will also encourage online app innovations, guaranteeing constant improvement and self-sustainability of e-services in the long-term.

Finally, the EUR 18 million IN2RAIL project aims to set the foundation for a resilient, consistent, cost-efficient, high capacity and digitalised European rail network. Innovative technologies will be explored in order to ensure that issues concerning infrastructure management, maintenance, energy consumption and engineering are fully integrated, optimised and shared. Automated, interoperable and interconnected traffic management systems will be investigated, as will new rail power supply and energy management solutions.

Results from all three projects will ultimately feed into the SHIFT2RAIL Joint Undertaking, a new public-private rail partnership established under Horizon 2020. The purpose of this Joint Undertaking (JU) is to provide a platform for coordinated research activities, with a view to driving innovation in the rail sector in the years to come.

The rationale for setting up a JU is that pooling and coordinating research and innovation efforts at the EU level stands a better chance of success. This is because the infrastructure and technologies to be developed in support of the Single European Railway Area are transnational by nature and also because there is a need to achieve a large mass of resources.

It is expected that SHIFT2RAIL will contribute to cutting the life-cycle cost of railway transport by as much as 50 %; doubling railway capacity; and increasing reliability and punctuality by as much as 50 %. The SHIFT2RAIL JU will manage the entire budget for rail research under Horizon 2020, which will amount to a maximum of EUR 450 million.

For further information please visit:

SHIFT2RAIL
http://www.shift2rail.org/
Source: Based on a press release from UNIFE.

Related information

Projects

- IN2RAIL - Innovative Intelligent Rail

Research and Innovation

	• ROLL2RAIL - NEW DEPENDABLE ROLLING STOCK FOR A MORE SUSTAINABLE, INTELLIGENT AND COMFORTABLE RAIL TRANSPORT IN EUROPE
	• IT2RAIL - INFORMATION TECHNOLOGIES FOR SHIFT TO RAIL
Programmes	• OTH-HORIZON2020
Countries	• Belgium, United Kingdom

Subjects

Energy Saving - Sustainable development - Transport

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