



# TRAINS: THE BACKBONE OF MOBILITY



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2021, the European Year of Rail, acquires a particular meaning taking place in the middle of a pandemic, when restrictions to mobility are imposed around Europe. When the idea started taking shape, all hopes of a faster return to normality were up.

2021 is really the occasion to celebrate rail: during the past months and year, in an unprecedented situation, rail has demonstrated what it means to be the backbone of mobility and transport. In a multimodal approach, the rail freight system has contributed to maintaining the flow of goods through the continent, ensuring transportation of heavy materials, fuels, chemicals, and medical equipment, up to supporting the transfer of critical passengers between regions in different Member States with high speed trains. It has also ensured commuter services and connections to allow workers in critical functions to reach their locations.

The European Year of Rail is about more than this, however. It's about bringing rail back to its real owners, the European citizens, the companies with ethical behaviours which decide to choose the sustainable path, the men and women that work everyday in rail to make it the mobility and transport choice of the future.

But also, the European Year of Rail is about how rail is rethinking itself and how the sector is committed to a major system transformation driven by digitalization and transformation. Shift2Rail, the European Union research and innovation Programme, has been a key enabler of such a transformation since its establishment in 2016. In just 5 years so much has been achieved, including: virtual coupling demos in Spain, successful pilot line tests related to automated train operations (GoA2) for passengers and freight in the UK and Switzerland, additional line tests performed on digital automatic couplers in Germany and Sweden, enhanced switches and crossings installed in Austria, as well as a multi-modal travel companion for passengers in Spain, Portugal, the Netherlands and Greece which was used as the basis for a public transport COVID-19 tracking app. All these

R&I activities and many more were successfully performed around Europe by multiple companies.

The European Year of Rail is the opportunity to show to policy makers, decision makers but also commuters, tourists, and millennials how rail is ready to engage with them to leverage its unique strengths to match their needs: safety and security of operations, low environmental impact of the infrastructure, electrification as a major source of traction, resilience in different conditions, and the capacity to meet the daily needs of diversified clients.

This dedicated year is also the opportunity to highlight the courage of the sector to recognize its limits and, once again, to engage with stakeholders to show rail's capacity to transform and evolve. National rail systems are the result of historical reasons, but in the last 30 years a reverse approach to bring down the existing technological and operational barriers has started. The overall objective is to reach a seamless, integrated rail system in a multimodal environment, building upon the evolution of national systems that will ensure interoperability by design. The final objective is to have operators being able to run their activities in the European Union and neighbouring countries without the need to make changes, such as it is already the case for aviation and/or road. The European regulatory framework has evolved with such a transformation, with the most recent framework defined by the IV Railway Package, with its two pillars, market and technology. Everything is in place for the success of rail and strongly supported by the rail sector stakeholders.

The Shift2Rail programme, bringing the sector together including a majority of rail manufacturers, a representation of the rail infrastructure managers and operators, as well as some research centres and universities, has taken up the aforementioned challenges and started delivering technological solutions that, once deployed, will start changing the way rail operates.

The European Year of Rail also coincides with the proposal of the European Commission to establish a new rail research and innovation European partnership, Europe's Rail, which will be the successor programme to Shift2Rail, for the period 2021 – 2031. It is a strong message, not only recognising the role of rail and research and innovation in general in the Covid-19 recovery path, but also an answer to the rail sector's willingness and call to do more and work together to accelerate the transformation process.

On this basis, the proposal of the Commission to the Member States to establish Europe's Rail becomes a signal that indicates the willingness to celebrate rail in 2021, but also the joint commitment to invest in rail to achieve the targets of the Sustainable and Smart Mobility Strategy<sup>1</sup>.

Europe's Rail will bring together the rail sector in a more balanced representation between manufacturers, infrastructure managers, rail operators and the research community. Importantly, it will introduce a system of systems approach focusing on a renewed concept of operations and a functional system architecture to be thought about by the sector within the dedicated governance of the "system pillar", part of the innovation lifecycle. Such an approach underpins the overall research and innovation activities that will be focusing on

automation and digitalization as key enablers of major capacity increase, lifecycle costs reduction, quality of services and punctuality, new business models, seamless journey for passengers and cargo activities.

This new partnership is not a continuation of Shift2Rail: while it will build upon the results of Shift2Rail, it will also introduce a major step forward - it will focus on covering the full research and innovation lifecycle, including facilitating the market uptake of technological and operational solutions (with the setting up of the "system pillar" at its basis and closing the loop with a "deployment coordination group"), as well as looking at new and emerging technologies, towards a short term impact aimed at a long term vision.

The European Year of Rail 2021 is about recognizing rail as we know it in our life and looking at the innovation path of rail: rail is moving Europe forward in the economic recovery, for a sustainable, ethical society, and rail research and innovation within Europe's Rail will be its key enabler.



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<sup>1</sup>COM(2020) 789 final, "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions".