

## MOVING EUROPEAN RAILWAY FORWARD

The Shift2Rail Joint Undertaking (S2R JU) contributes to smart and sustainable growth by developing cutting-edge innovative solutions to create railway systems of the future for passengers and freight. Funded under the European Union's Horizon 2020 Programme, the Shift2Rail JU addresses evolving needs of EU citizens, targets life-cycle cost and efficiency of rail systems, and develops the necessary technologies to complete the Single European Railway Area, contributing towards a climate-neutral European society. The S2R R&I Programme focuses on demonstration activities and dissemination of relevant results for market uptake, promoting the competitiveness of the European rail industry while creating a multiplier effect of EU funds.

## S2R OBJECTIVES



**50% INCREASE RELIABILITY & PUNCTUALITY BY 50%**



**X2 DOUBLE RAILWAY CAPACITY**



**HALVE LIFE-CYCLE COSTS OF RAILWAY TRANSPORTS**



**CONTRIBUTE TO REDUCTION OF NEGATIVE EXTERNALITIES, SUCH AS NOISE, VIBRATIONS, EMISSIONS & OTHER ENVIRONMENTAL IMPACTS**



**CONTRIBUTE TO THE ACHIEVEMENT OF THE SINGLE EUROPEAN RAILWAY AREA (SERA)**

## UNIQUE PARTNERSHIP

S2R is sustaining the competitiveness of the European rail industry to meet future mobility needs of EU citizens, towards a climate-neutral European society. It acts as a rail R&I hub bringing together the manufacturers, rail operators, SMEs and research institutions.\*



**28 MEMBERS**



**496 PARTICIPANTS**



**29 COUNTRIES**



**128 SMEs**



**128 RESEARCH CENTRES AND UNIVERSITIES**

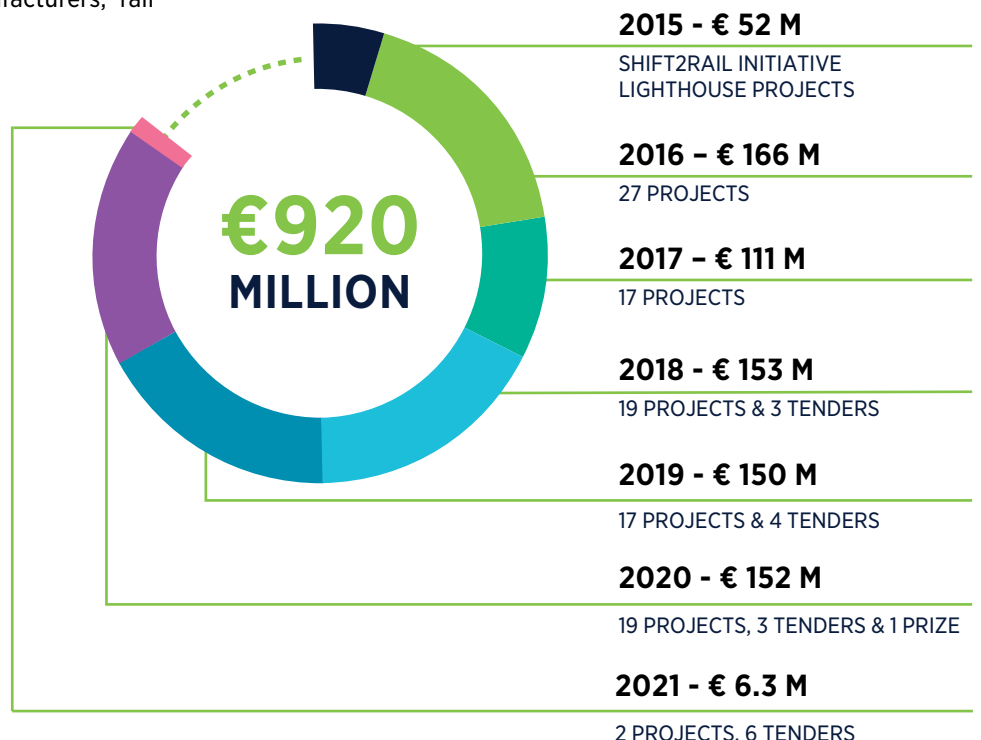
\*Data extracted from CORDA database in September, 2021

## S2R VISION

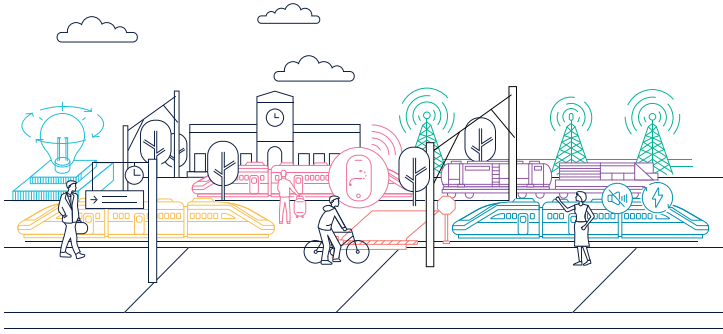
To deliver, through railway research and innovation, the capabilities to bring about the most sustainable, cost-efficient, high-performing, time driven, digital and competitive customer-centred transport mode for Europe.

## S2R BUDGET 2014-2021

SHIFT2RAIL FUNDING THROUGH CALLS FOR MEMBERS, OPEN CALLS FOR PROPOSALS & PROCUREMENT\*\*



# ROADMAP TO INNOVATION



## Innovation Programmes

Guided by its Strategic Master Plan, the R&I activities of Shift2Rail JU are structured around 5 key Innovation Programmes (IPs), Cross-Cutting Activities (CCA) and a new IP on System Architecture and Disruptive Technologies, bringing together the evolution of the future rail, covering the relevant railway technical and functional subsystems and actors, as well as interactions between them.

## Innovation Capabilities

Shift2Rail projects are delivering twelve Innovation Capabilities, essential to meet the needs of railway operators and network managers and pave the way to the digital railway system and multimodal European mobility.

- #1  AUTOMATED TRAIN OPERATION
- #2  MOBILITY AS A SERVICE
- #3  LOGISTICS ON DEMAND
- #4  MORE VALUE FROM DATA
- #5  OPTIMUM ENERGY USE
- #6  SERVICE TIMED TO THE SECOND
- #7  LOW COST RAILWAY
- #8  GUARANTEED ASSET HEALTH & AVAILABILITY
- #9  INTELLIGENT TRAINS
- #10  STATIONS & "SMART" CITY MOBILITY
- #11  ENVIRONMENTAL & SOCIAL SUSTAINABILITY
- #12  RAPID & RELIABLE R&D DELIVERY

## BRINGING TANGIBLE BENEFITS TO EU ECONOMY

The benefits below are in reference to the period 2015-2030. Source: Impact assessment: Proposal for a Council Regulation establishing the Shift2Rail Joint Undertaking SWD (2013) 535



CREATION OF ADDITIONAL EU GDP UP TO **€ 49BN**



UP TO **€ 9BN** INDIRECT LEVERAGE ON INDUSTRY R&I (BY DEVELOPING H2020-FUNDED INNOVATIONS) (2017-2023)



CREATION OF EXTRA **140 000 JOBS**



**€ 1BN** LIFE-CYCLE COST SAVINGS IN FIRST 10 YEARS, THEN VIA CONTINUED IMPLEMENTATION- € 150 MILLION/YEAR



ADDITIONAL EXPORT WORTH UP TO **€ 20BN**