

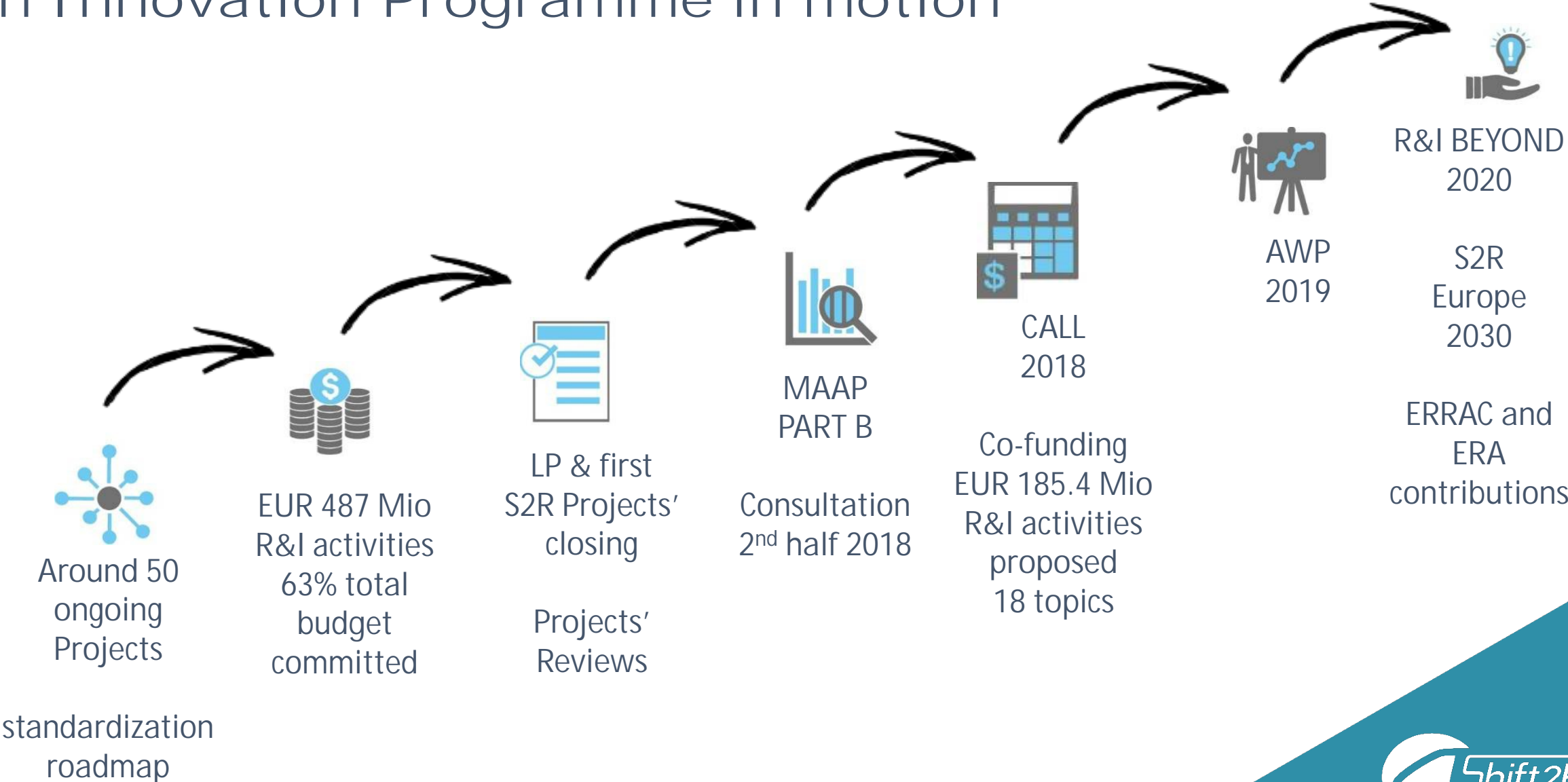
S2R Programme Progress & Future Challenges

Vienna, 4 June 2018

@Shift2Rail_JU
#Horizon2020



An Innovation Programme in motion



LP Summary of Results

Roll2Rail	
Silicon Carbide technology - Traction	Significant reduction of energy consumption(-10%), traction maintenance costs (-20%), weight (-10%) and noise (-5%) to compare to Regional case baseline
TCMS	New LTE apps and wireless, simplified architecture for V2V comms, significant increase in safety and reliability
Car body shell nextgen	Recs for new lightweight materials, new geometry, weight reduction up to 16% HSP, up to 20% Urban
Homologation process for brakes	Recs for harmonisation to facilitate introduction of improved performance brakes
Noise levels	Reliable noise prediction methodologies, noise from traction motors and traction converters, prevent operational and speed limits due to non-compliance with noise restrictions

LP Summary of Results

In2Rail	
New design concepts for switches and crossings systems	Significant decrease in failure rates Estimated reduction of maintenance costs up to 25%
Improved tunnel and bridge inspection methods	Analysis of relevant key performance indicators for an improved inspection methods for bridges and tunnels with improved reliability due to continuous monitoring, prediction of faults and reduction of maintenance cost
Intelligent Mobility Management	Data set definitions for modelling the TMS operations; Integration Layer providing data management and data access facilities; Application Framework establishing a platform for plug-and-play microservice architecture => capacity increase; reliability and reduced cost for Rail Freight Operations via ETA and advanced slot planning tools. Innovative nowcasting and forecasting scenarios, resulting in optimized real-time traffic management based on network asset status to avoid and recover faster from disruptions
Smart Power Supply & Smart Metering for Railway Distributed Energy Resource Management System	Definition of interfaces to integrate the TMS with the Electrical Traction System (ETS), evaluation of limitations in the ETS during major outages is enabled and can be communicated to the TMS => new opportunities in energy purchasing by now-casting of peak power and energy demand Increased energy efficiency

LP Summary of Results

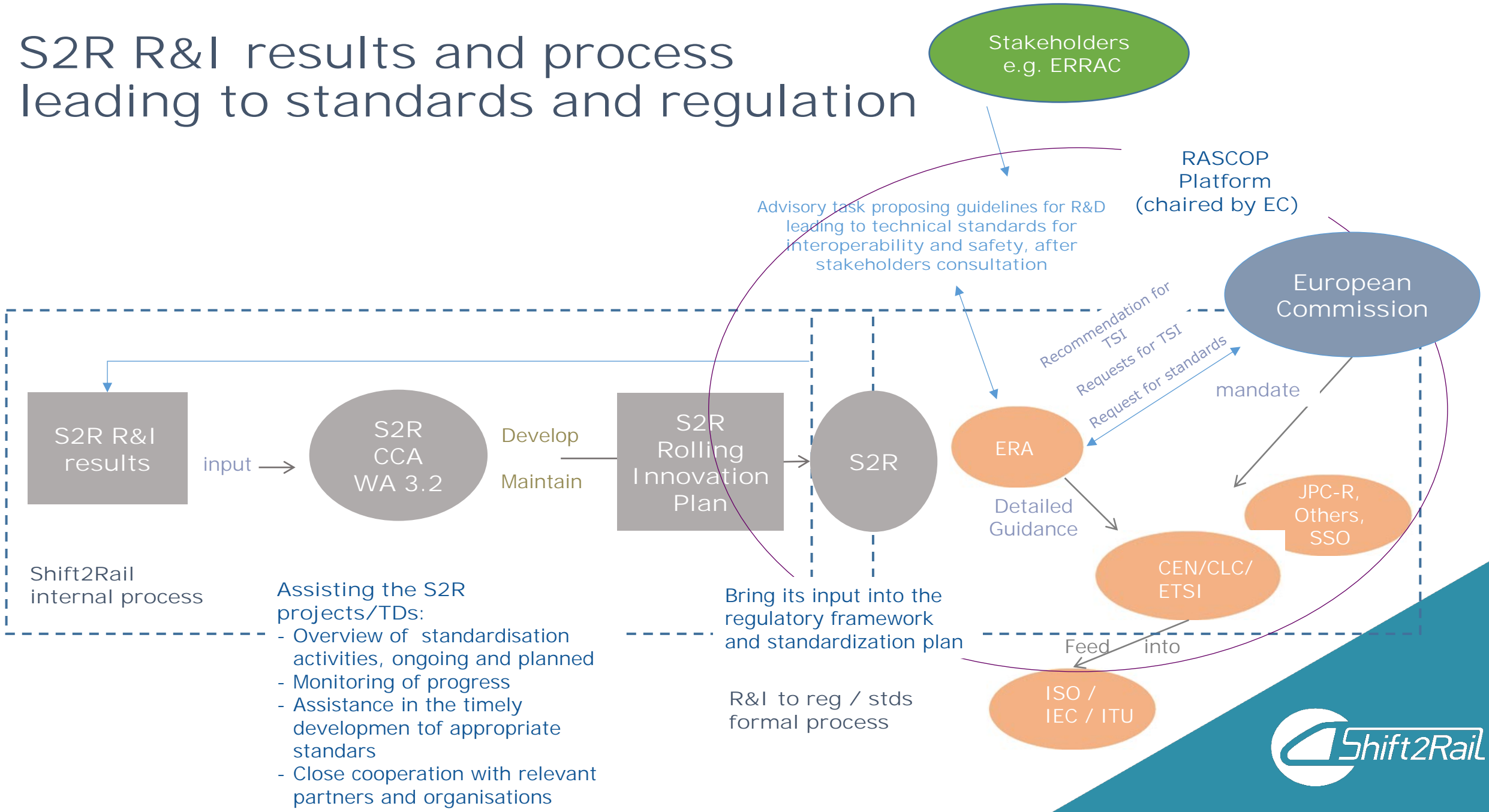
IT2Rail	
<p>TD4.1 Interoperability Framework</p>	<p>Semantic interoperability Packaged resolvers/brokers Get Stop Places within a requested radius Generate meta-routes operated by Transportation Service Providers Identify Travel Expert and Booking Engine web services Mediate the interactions between the IT2Rail ecosystem and Transport Service providers' services</p>
<p>Assets Management</p>	<p>Allows independent transportation service providers to participate in the 'web of transportation' environment</p>
<p>IT2Rail solutions</p>	<p>Book and pay for journeys including different modes (air, rail, coach and urban public transport) and operators in a one-stop shop Provide complete travel solutions, hiding the multiplicity, heterogeneity and complexity of the interactions needed to produce them Options for re-routing and re-accommodation in case of a disruptions Personalized Travel Companion responding to costumer's needs</p>



LP Summary of Results

Smart Rail	
Recommendations	<p>New Business models supporting cooperation within the rail freight sector</p> <p>Business models enabling collaboration in the supply chain</p> <p>Business model for cooperation in CIT 1 (Continuous Improvement Track, one of the three living labs) "Single Wagon Load"</p> <p>Analysis of challenges on cross-border rail freight traffic, for some of the problems recommendations and solutions were provide</p> <p>Architecture for data sharing solution</p>

S2R R&I results and process leading to standards and regulation



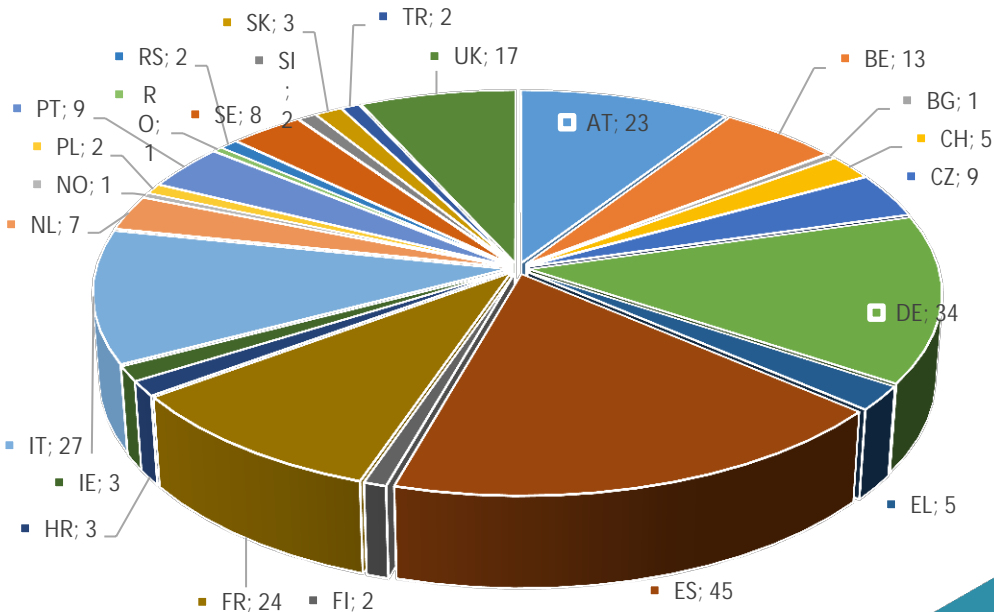
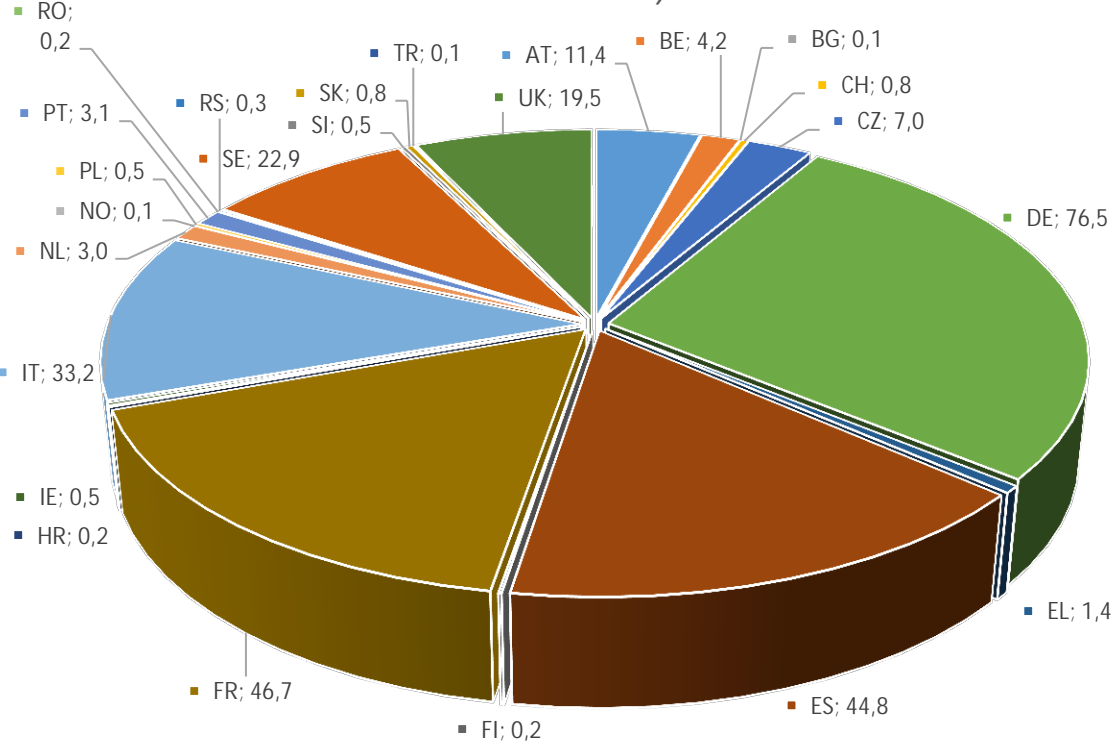
- Assisting the S2R projects/TDs:
- Overview of standardisation activities, ongoing and planned
 - Monitoring of progress
 - Assistance in the timely developmen tof appropriate standars
 - Close cooperation with relevant partners and organisations

Participation per MS

excluding Lighthouse Projects

Number of entities per Member State

Total Research & Innovation Activities per Member State (TPC, Mio EUR)



S

S2R 2 requires revised

Governance

membership vs participation

Content

ERRAC Vision 2050, Master Plan

Regulation & Administrative Simplification

No matrix approach, flexibility, clarity, ... while maintaining legality/regularity and sound financial management

ad-hoc governance
open to all

Funding type: FP9
rules

PPP members
par

Flat rate
account

Innovation beyond 2020

T-UPS
KY APPS

PP
SE
L: S

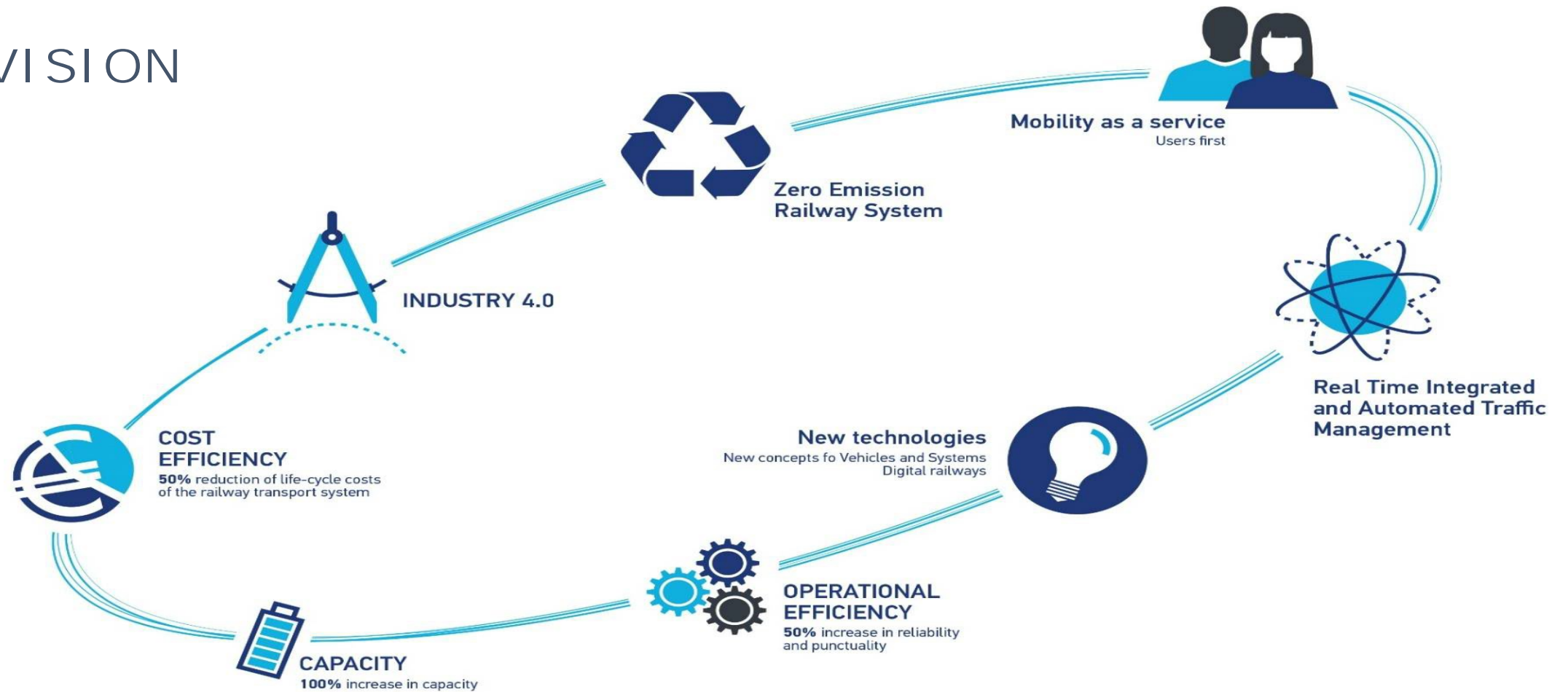
19 JUNE 2018

DIALOGUE CONFERENCE ON

S2R: THE FUTURE OF RAIL RESEARCH AND INNOVATION

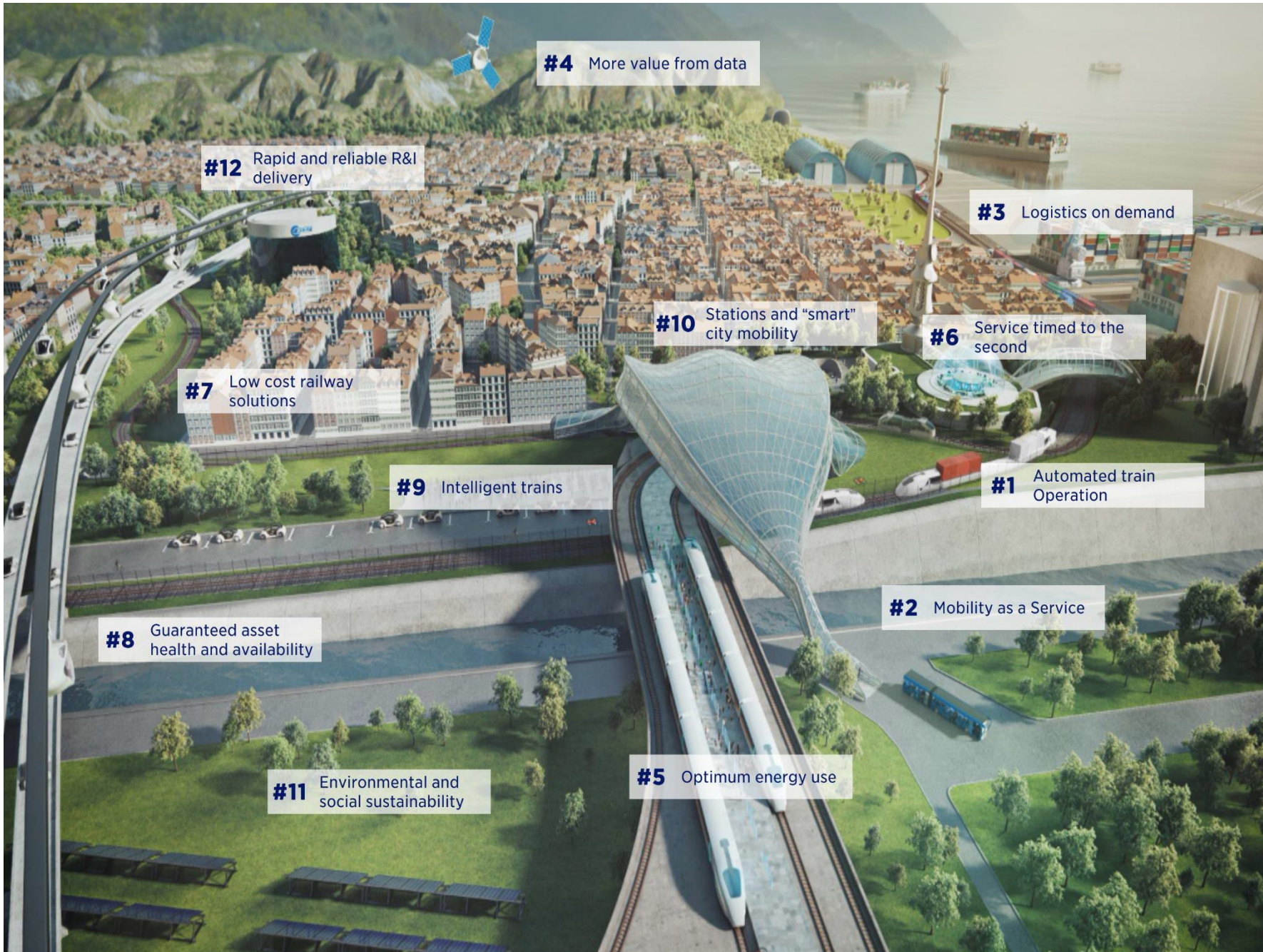
a journey towards 2020 decision

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-driven transport mode for Europe

Innovation Capabilities





@Shift2Rail_JU
#Horizon2020

carlo.borghini@s2r.europa.eu

