Welcome!

S2R-WiFi

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Opening address

Carlo M. Borghini
Executive Director
Shift2Rail Joint Undertaking

Keynote Speech

Prof. dr hab. Bogusław Liberadzki

Member of the European Parliament

Potential of JU-ESI funds synergies in S3 context

Karel-Herman Haegeman

Joint Research Centre

The European Commission's science and knowledge service

Joint Research Centre

European Commission

Potential for synergies between of Joint Undertakings and ESI Funds in an S3 context

Stairway to Excellence

Regional Cooperation Workshop Shift2Rail

European Commission, JRC.B3 Territorial Development

Karel-herman.haegeman@ec.europa.eu

Brussels, 9 October 2019

Initiative funded by the European Parliament and implemented by JRC in close collaboration with DG Regio.

European Commission

Stairway to Excellence (S2E)

Objective: Support enhancement of the value of EU funding sources for R&I and regional development in RIS3 implementation.

Funding synergies, capacity building, support innovation eco-systems

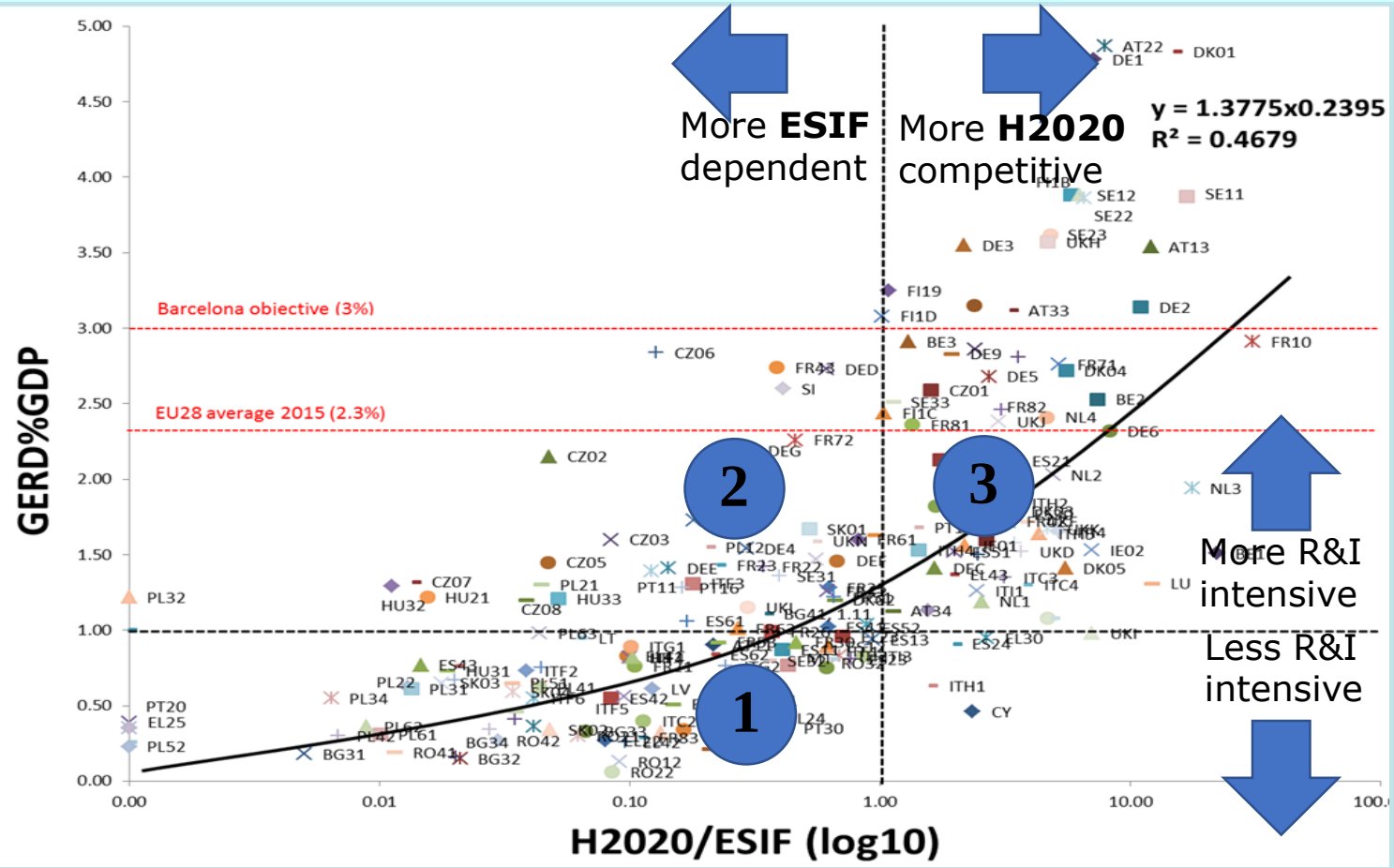
Initiative from European Parliament, supported by DG REGIO, implemented by JRC

Active since 2014.

S2E I-II (EU13), S2E III-IV (EU28).

European Commission

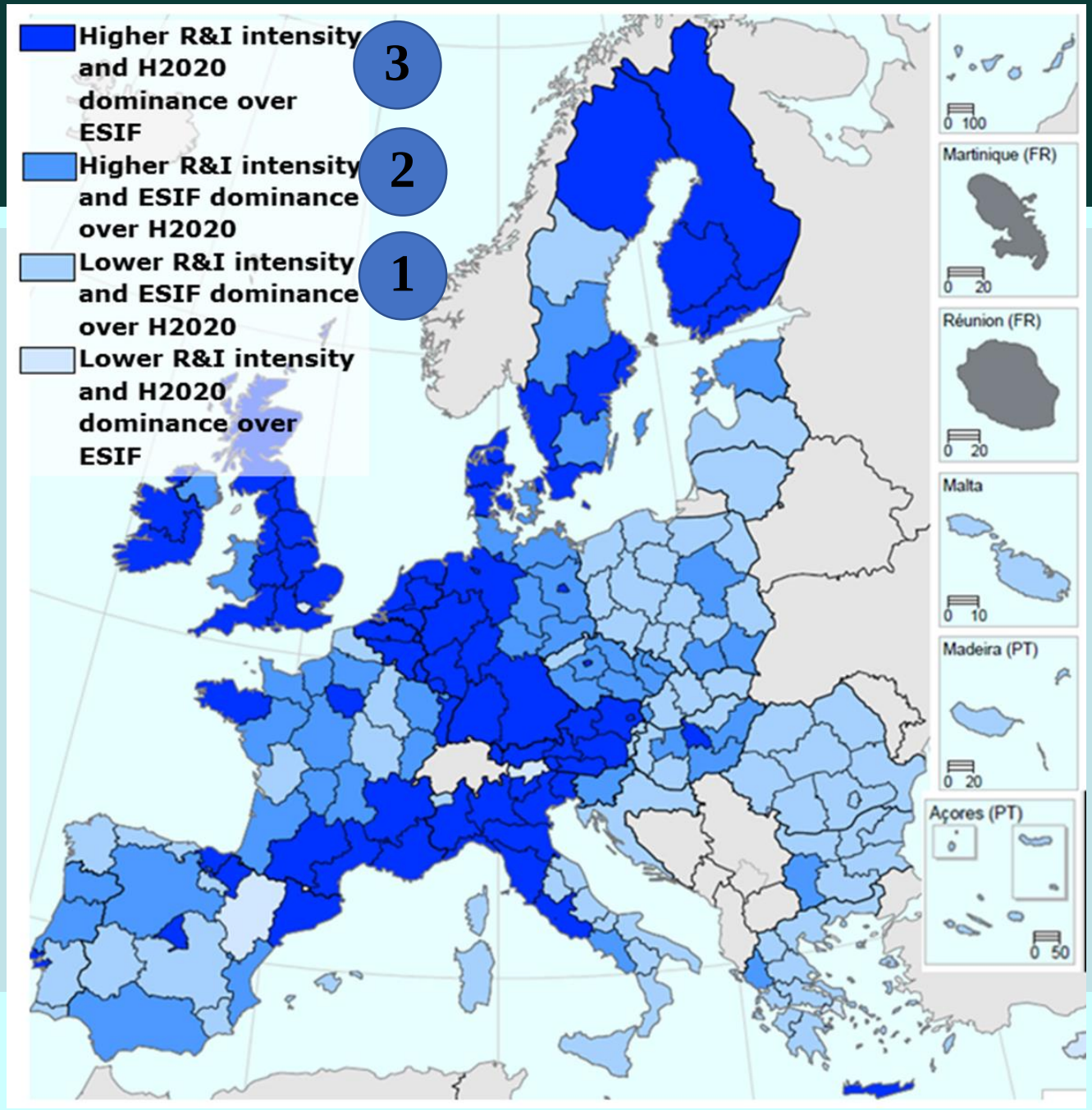
EU Regional divide showed by the use of EU funding and R&I intensity



3 main areas:

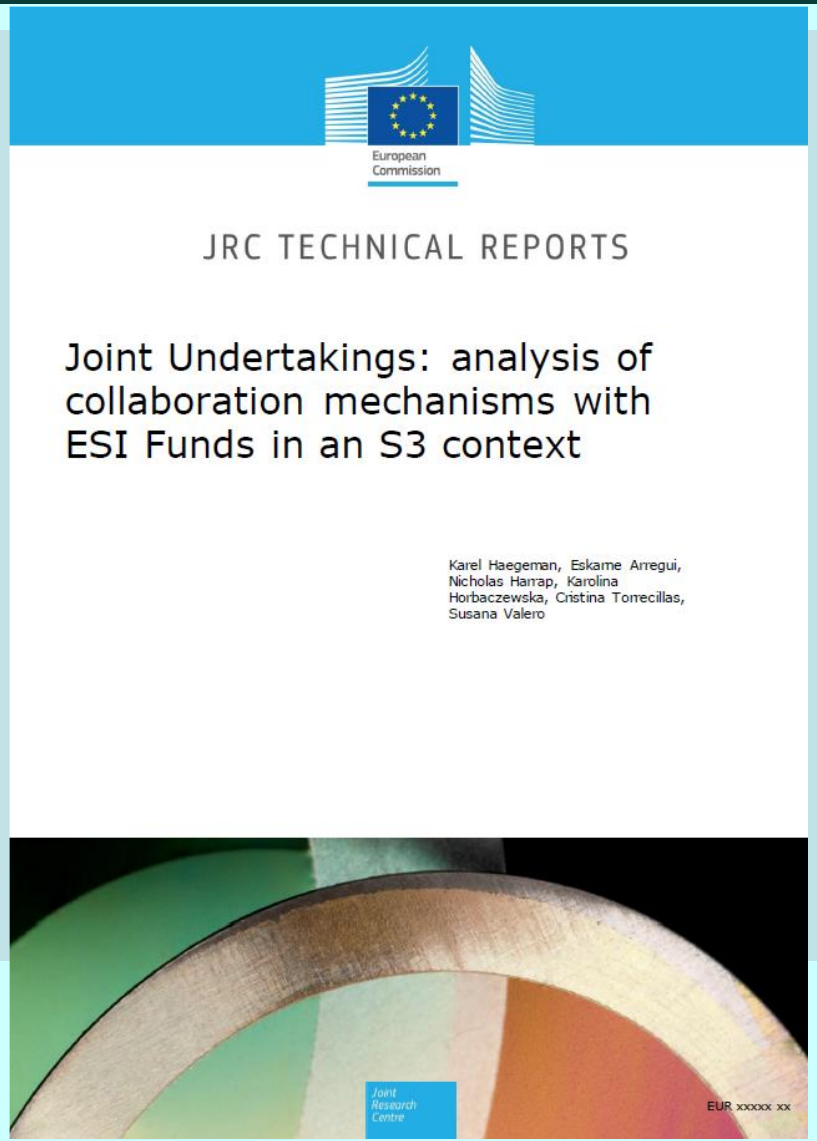
- Area 1: the 'lagging R&I regions' area defined by low R&D intensity with higher ESIF dependence and lower capacities to capture H2020 funding (lower left quadrant).
- Area 2: the 'intermediary R&I regions' area defined by a higher R&I intensity combined higher ESIF dependence and lower capacities to capture H2020 funding (upper left quadrant)
- Area 3: the ' better performing R&I regions' area with higher R&D intensity combined with lower ESIF dependence (upper right quadrant).

European Commission



European Commission

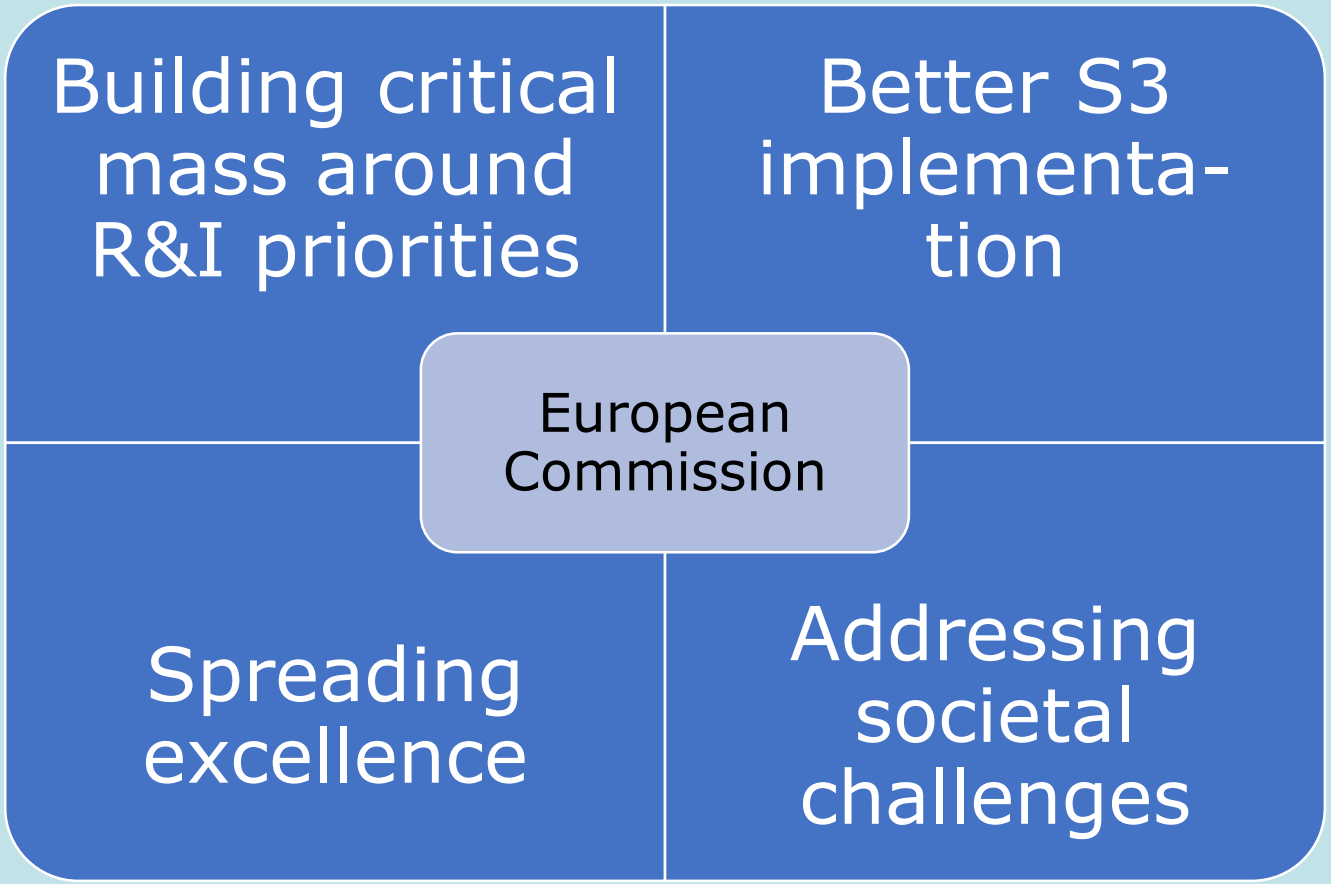
Rationale



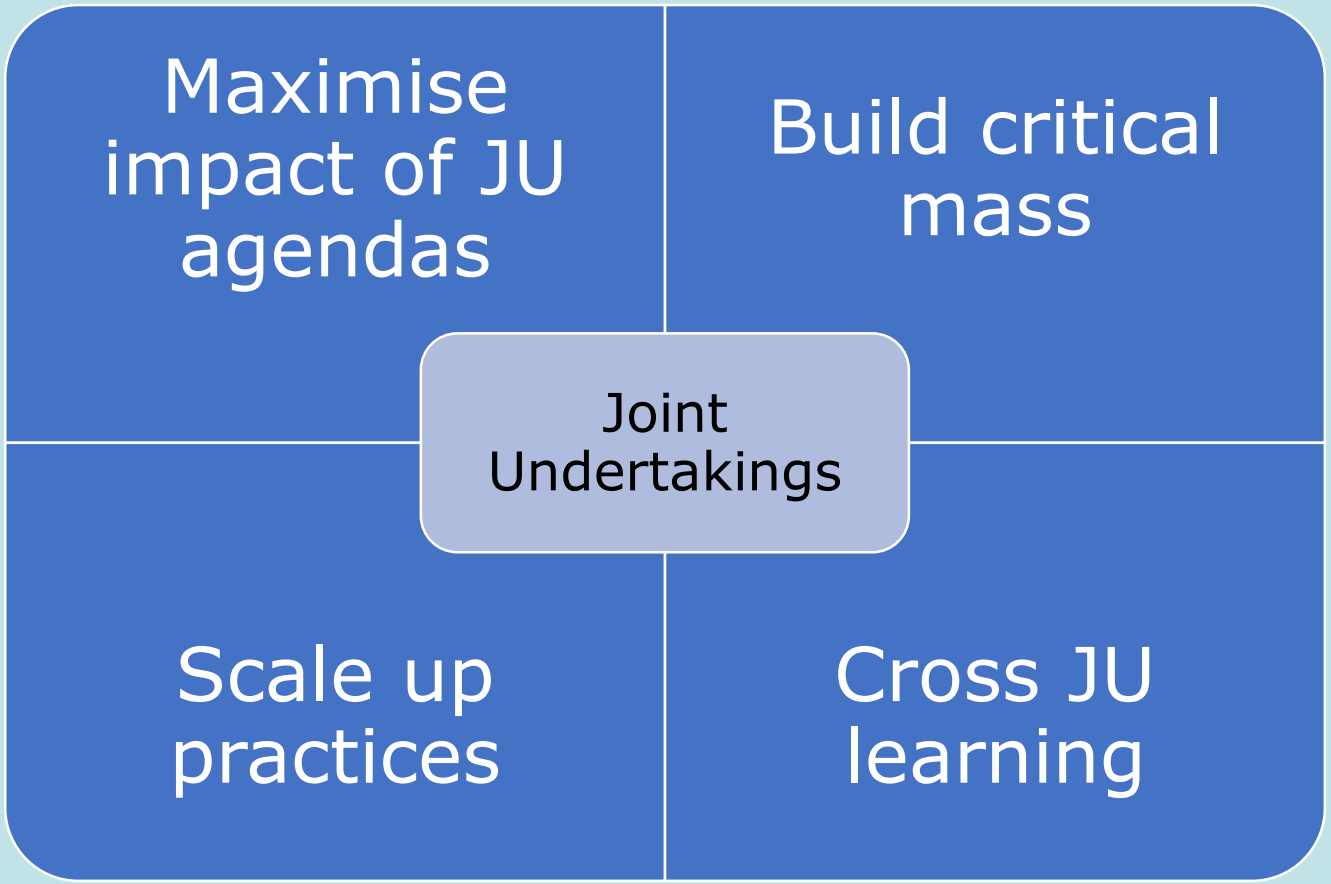
- Learn from good practices in funding collaboration
- Focus on the case of Joint Undertakings, but also applicable to Contractual Public-Private Partnerships (cPPPs)
- Builds on analysis of practices and on past events with selected JUs
- Aims to bridge a **knowledge gap** hampering further collaboration
- Match-making event Brussels (7 March 2018) with MSs, regions and Jus (180 attendees)
- S3 as a starting point, but also applicable to optimal use of public national funding

European Commission

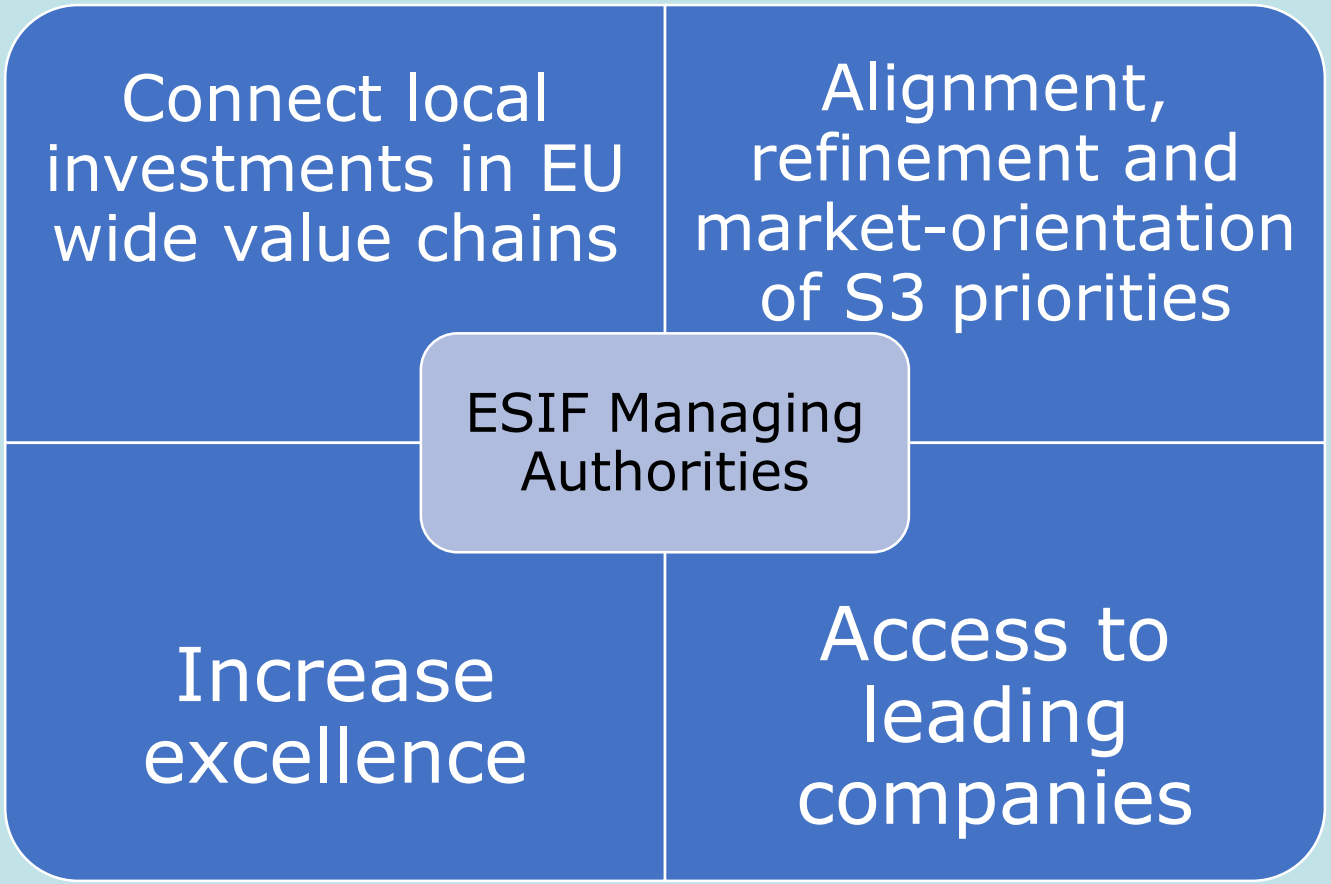
Motivations (1)



Motivations (2)



Motivations (3)



Identification of collaboration practices

Strategic Collaboration Modes
National Grant Agreement
Individual Memorandum of Understanding
Collective Memorandum of Understanding
Project-based
No formal agreement

Operational Collaboration Modes	
Funding related	**Not funding related**
Capacity building (upstream)	Alignment of research agendas
ESIF funding for deployment (downstream)	Awareness raising
ESIF funding for high quality proposals	Funding guidance
ESIF funding for additional R&I activities under the topic of the JU	Joint working groups at regional and national level

Bottlenecks and mitigation strategies

Territorial bottlenecks

Wide national/regional priorities

Lack of knowledge on regional research agendas

Insufficient mapping of regional capacities

Lack of critical mass

Lack of international networks

Lack of intra-regional coordination

Mitigation strategies

A reform of the RIS3 governance system

Reinforcing the mapping of available capabilities in the supply chain across European territories (e.g. through regional fiches)

Organisation of regional actors around a focal point or cluster;

Developing a long-term regional strategy

Facilities provided by JUs to regions

The use of ambassadors

Low information and knowledge sharing capacity

Reinforce the role of NCPs

Unlocking untapped potential

Match-making

- EU wide match-making
- Country-specific of theme-specific match-making

Capacity building

Alternative options for national and regional administrations and for Jus

Reinforce interregional collaboration

Outlook

- Horizon Europe and ERDF: proposal for common provision regulations: transfer of up to 5% of the programme financial allocations to another EU fund
- Uneven spread across Europe of engagement with JUs: more capacity building needed
- More synergies needed to build EU wide value chains
- Similar exercise ongoing with EIT Knowledge and Innovation Communities for World Leading Innovation

Shift2Rail JU programme and synergies with EU Structural and Investment Funds

Regional cooperation workshop

Brussels 9 October 2019

Judit Sándor, Programme Manager at S2R JU

Monique van Wortel, Seconded National Expert at S2R JU

@Shift2Rail_JU
#Horizon2020

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**

S2R PROGRAMME, ABOUT € 1BLN and A NEW APPROACH TO R&I IN RAILWAY

working together & driving innovation

Shift2Rail

AN OPEN and ACTIVE ORGANISATION

28
MEMBERS

375
PARTICIPANTS INVOLVED FROM **28** COUNTRIES

101
SMEs

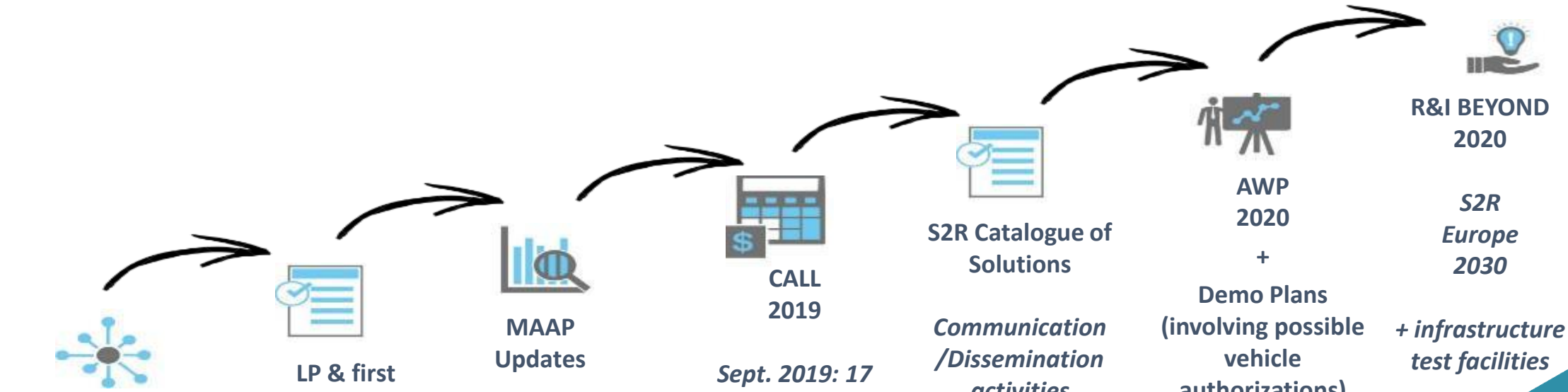
103
RESEARCH CENTRES AND UNIVERSITIES

[1]Data extracted from CORDA database in February, 2019

…opening up new Capabilities coming from emerging technologies or concepts!

Shift2Rail

An Innovation Programme in motion

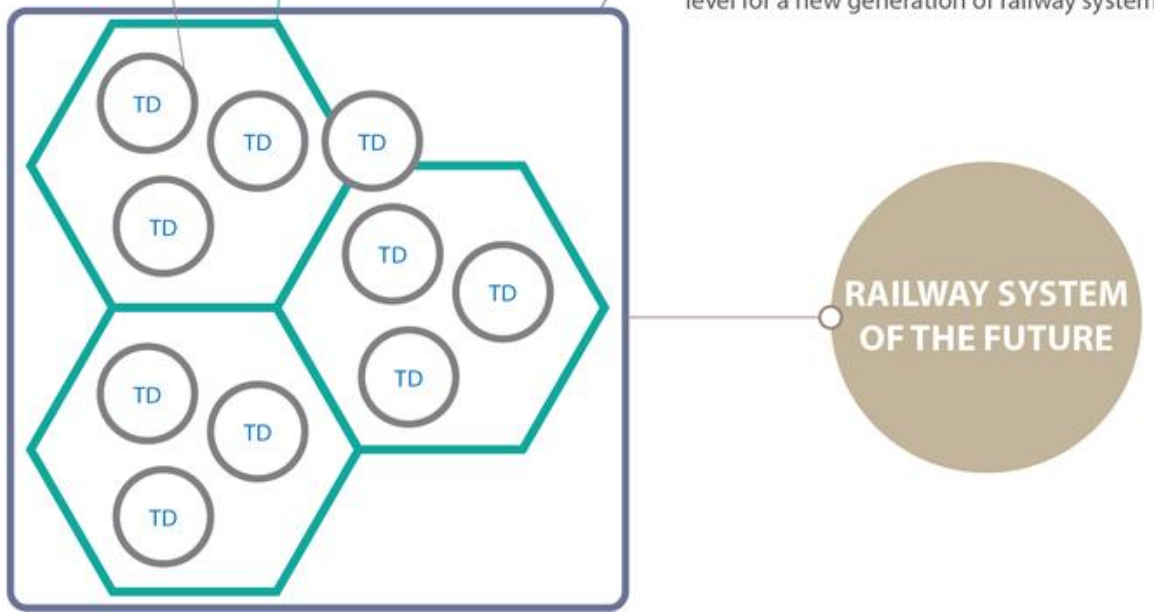


From TRL0 to TRL6/7

Technology Demonstrator (TDs)
Projects specifying, developing and demonstrating a specific technology resulting in a lab tested and/or simulated prototype

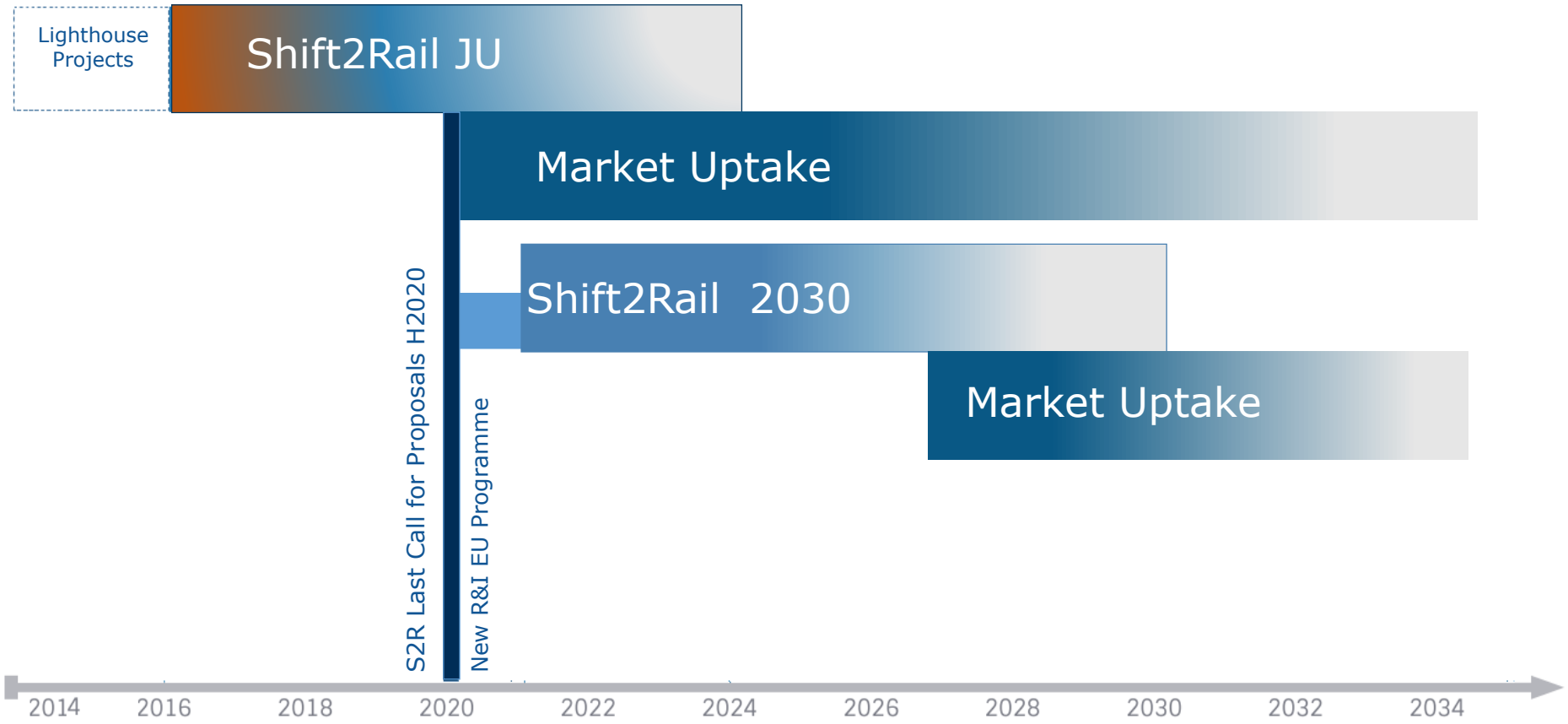
Integrated Technology Demonstrators (ITDs)
Projects integrating/combining TD prototypes at system level (lab and on-site) and testing performance

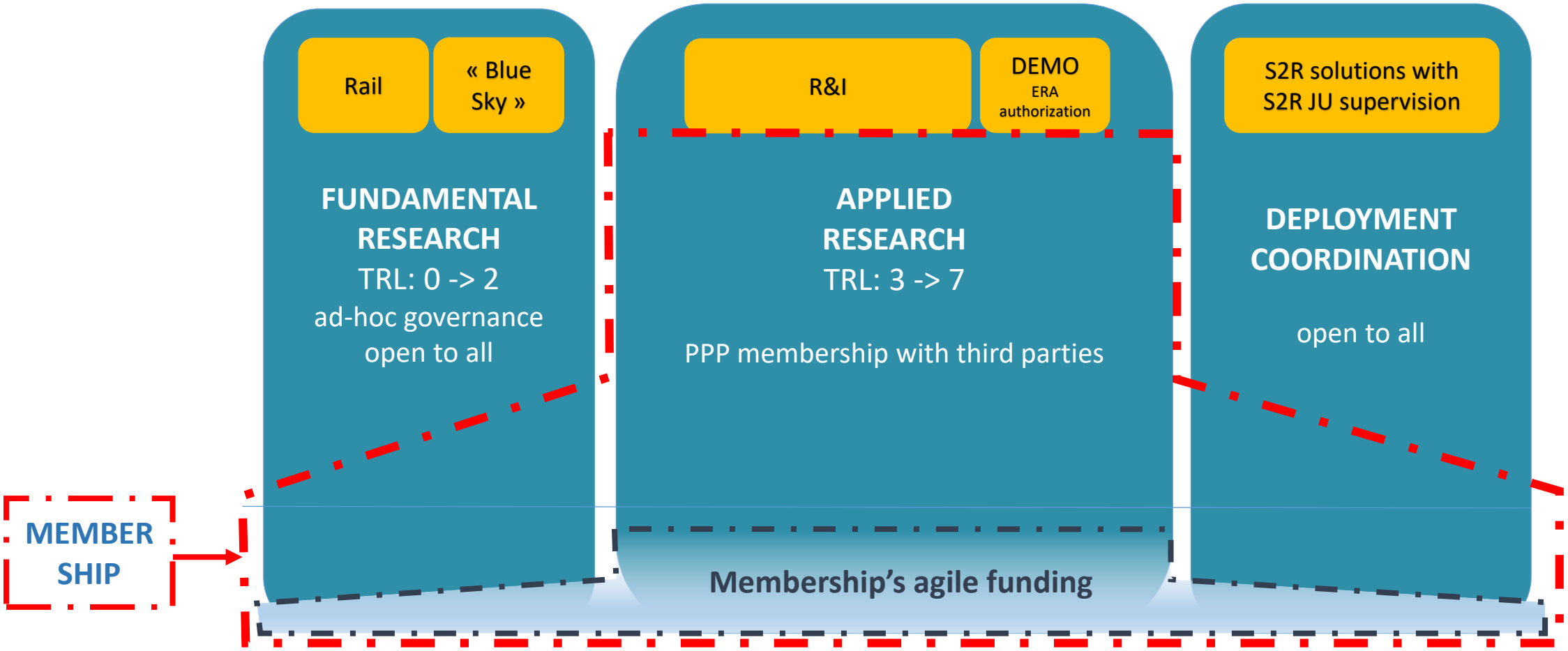
System Platform Demonstrators (SPDs)
Assessment of the whole systems performance based on the results of TDs and ITDs. SPDs bring S2R innovative solutions to a technology maturity level for a new generation of railway system



RAILWAY SYSTEM OF THE FUTURE

R&I BEYOND 2020





Funding type: HE rules

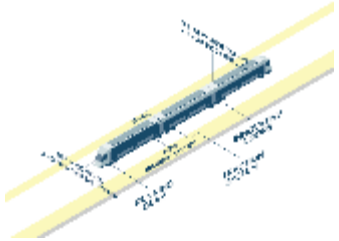
Flat rate on entity accounting rules

Funding type: HE, to be complemented in implementation by CEF/EIB/etc.

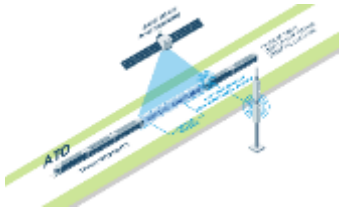
No participation barriers between R&I&D areas

TRL 7 Demos included in Applied Research, Live Large Scale Demos in Deployment Coordination

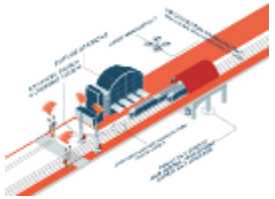
S2R solutions derived from Technical Demonstrators



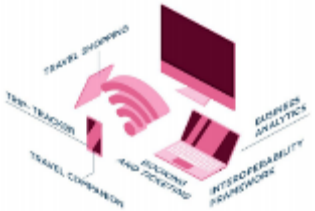
IP1 Cost-efficient and Reliable Trains, including high-capacity trains and high speed trains



IP2 Advanced Traffic Management and Control System



IP3 Cost-efficient, Sustainable and Reliable High Capacity Infrastructure



IP4 IT Solutions for Attractive Railways Services

IP5 Technology for Sustainable and Attractive European Rail Freight

CCA Cross Cutting Activities

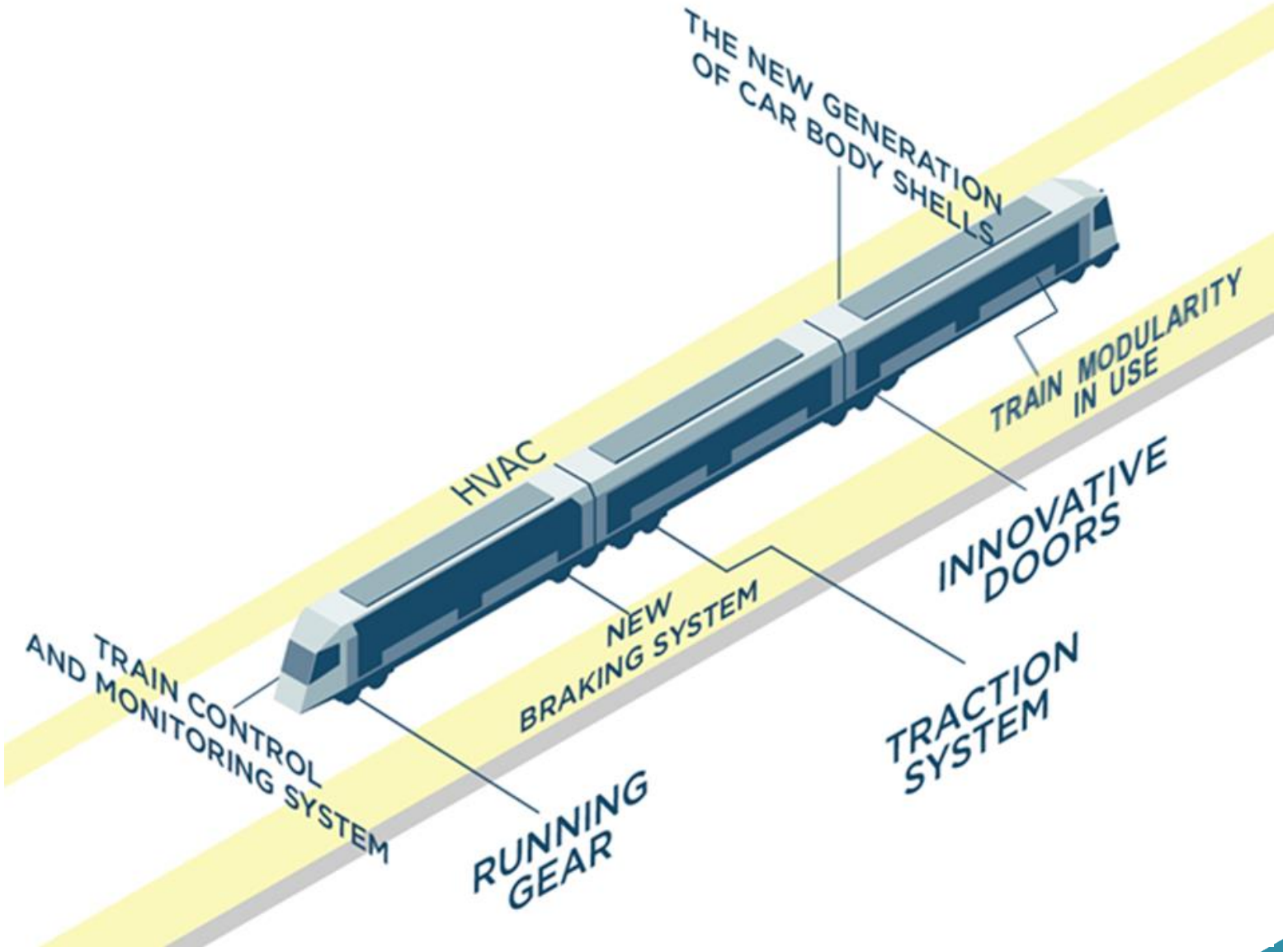
WHO BENEFITS?

CUSTOMERS

- FINAL USER
- OPERATOR
- INFRAMAN
- SUPPLIERS

Shift2Rail

IP1: Cost-efficient and reliable trains, including high-capacity trains and high-speed trains



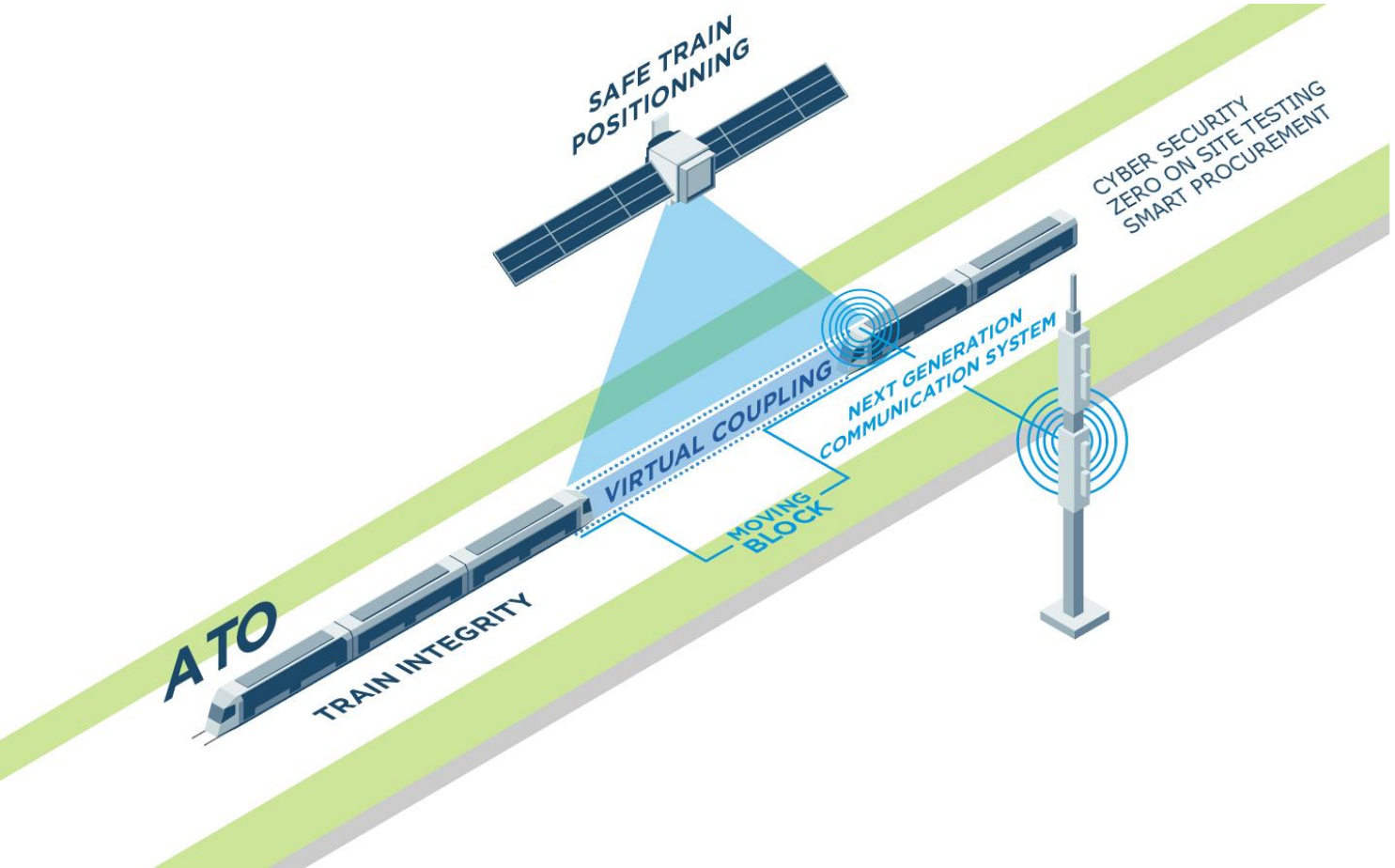
IP1: key achievements and ongoing activities

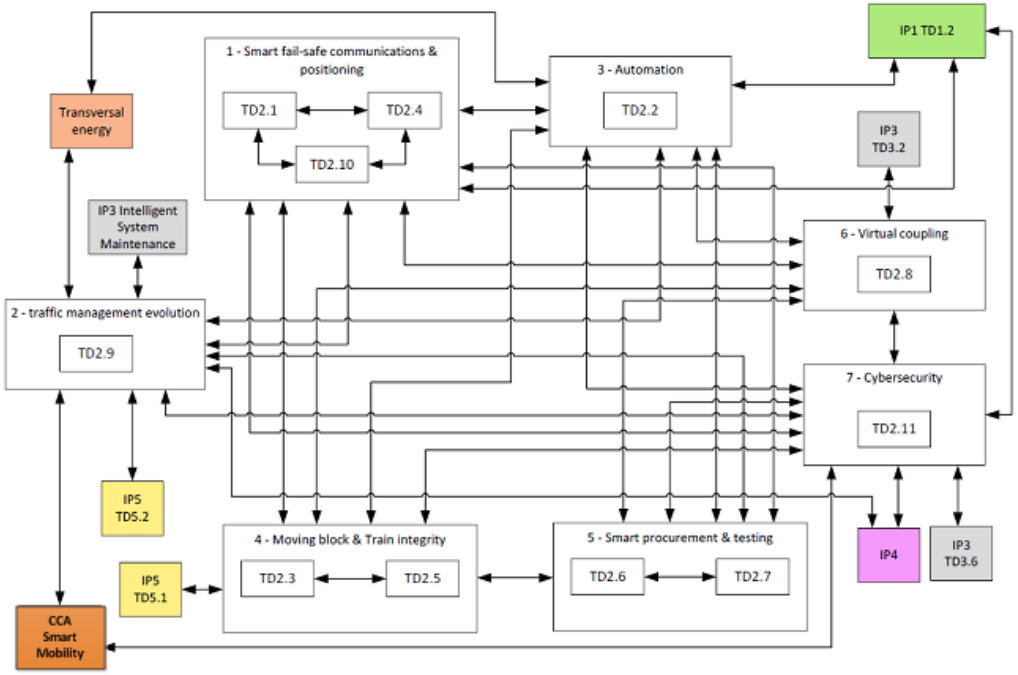
- **TCMS:** Wireless Technology for train communication network, Drive by Data and Functional Open Coupling concept.

  - Prove of concept for integration of SIL4 functions in TCMS, significant reduction of wires (Installation and Maintenance Costs) e.g. enabling virtual coupling of trains

- **Doors and interiors**: next gen doors, new modularity concepts, PRM access, optimized passenger flow
- **Carbody Shell and Running Gear:** Introduction of new materials and smart maintenance

IP2: Advanced Traffic Management and Control System





IP2: key achievements and ongoing activities

- **ATO for mainline railways**; GoA4 will reduce human error and increase service availability
  - GoA2 draft specifications available (reviewed by sector + ERA); pilot tests beginning of 2020
  - Use cases/specifications for GoA3/4 (*full unattended operations*) are ongoing.

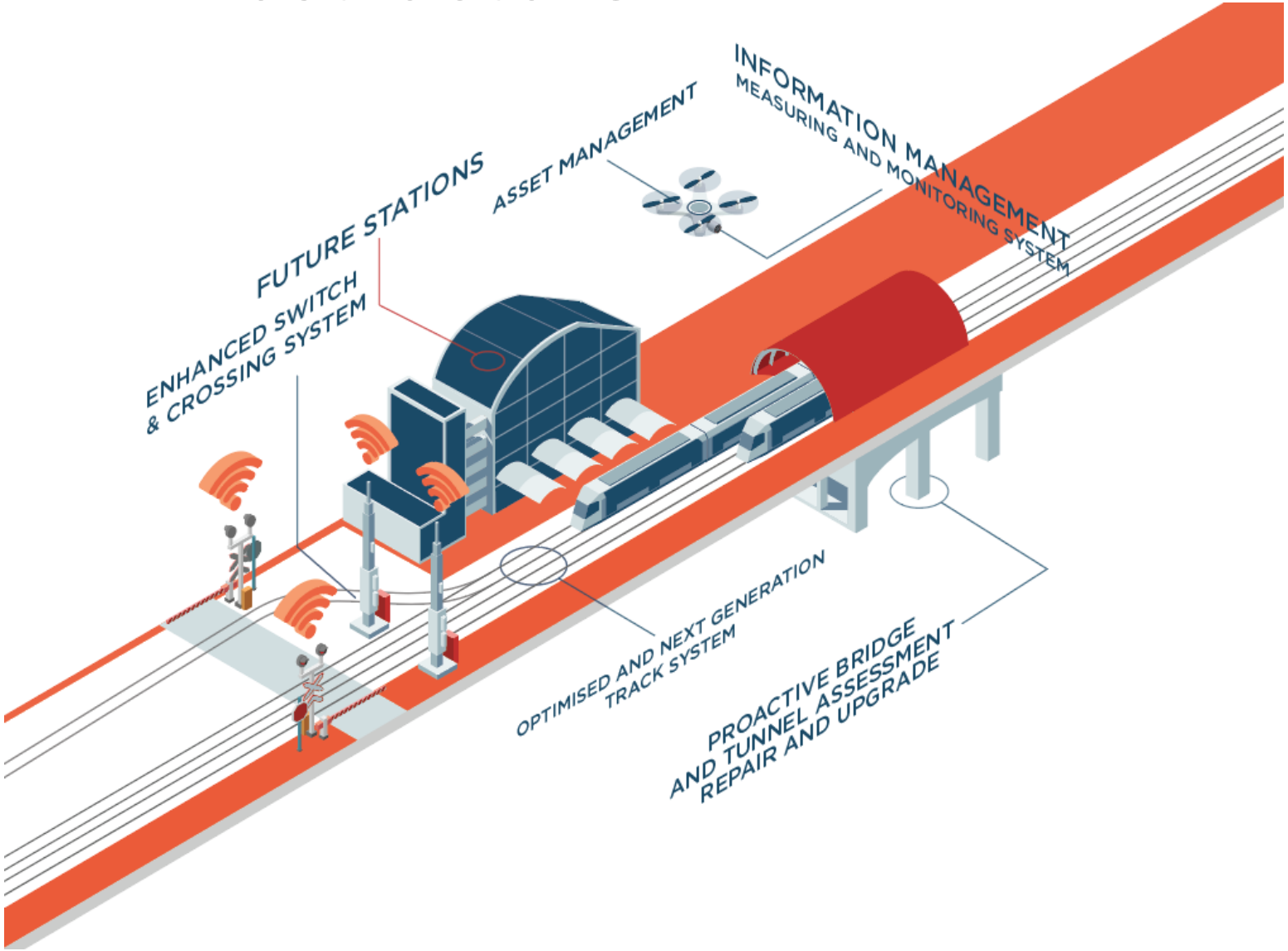
- **Moving Block** based on ERTMS/ETCS specifications and opportunity to remove trackside fixed signalling systems
  - Specifications delivered

- **GNSS/positioning systems** applied to rail to remove physical balises and facilitating the application of moving block
  - System Requirements Specification and system architecture delivered

- **Adaptable communication for railways,** technology and bearer independent
  - Cooperation UIC FRMCS (+ ERA) on use cases;
  - Specifications delivered and prototyping ongoing

- **A new Railway Functional System Architecture is under preparation**

IP3: Cost Efficient and Reliable High Capacity Infrastructure



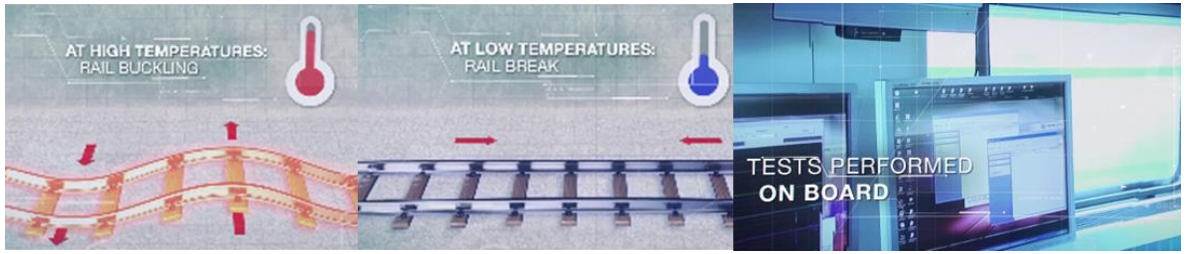
Infrastructure: tracks, S&C, bridges und tunnels, new station design

Asset Management

Energy Management

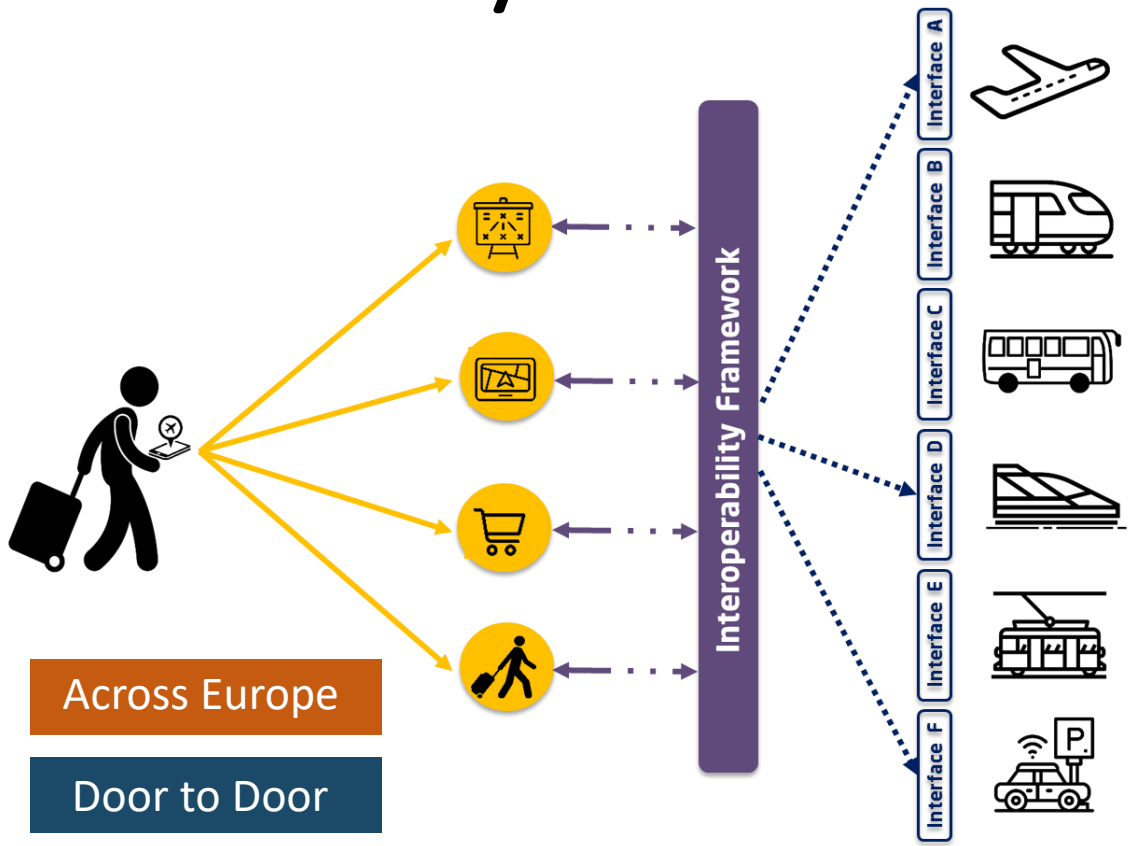
IP3: key achievements and ongoing activities

- **Intelligent Asset Management:** Shift from reactive to proactive maintenance based on innovative monitoring/ measuring & processing technologies
  - Innovative technologies in asset measuring & monitoring (satellite, drones, robotics), data processing & decision support (IoT, Artificial Intelligence)
  - Demonstration & evaluation of asset management, maintenance strategies: Thermal Stress Monitoring, and Lean Tamping



- **Intelligent Energy Management:** mapping of all energy flows in railway system for management strategies. Future traction power supply system in integration with public grid
  - Proof-of-Concept in light-train environment (tramway)
  - Design of an intelligent substation, 66% savings on transmission losses, 25% reduction on dimensioning

IP4: IT Solutions for Attractive Railways Services



Across Europe

Door to Door

Across Modes

Across Services

IP4: key achievements and ongoing activities

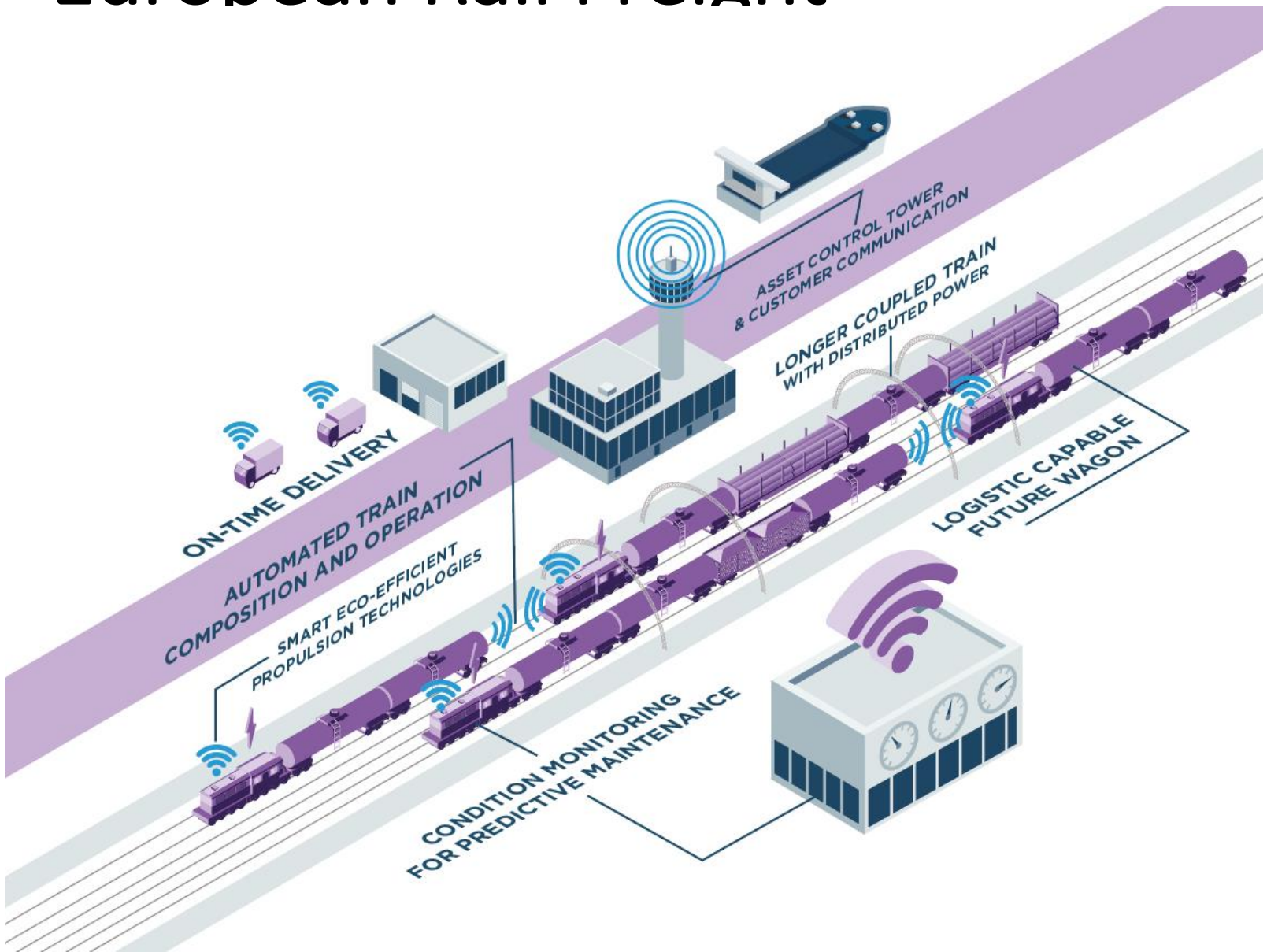
- **Interoperable framework:** semantic based IT solution capable of making interoperable different databases using different standards, without the need of changing the legacy systems – creating a multimodal framework

- **Multimodal travel services:** providing to the passenger the easy interface, masking the complexity of technical and financial interaction among the several services provider, for shopping, booking and retrieving their right to travel

- **Customer experience applications:** providing to the user the engine to search its travel accordingly to his/her specific needs/preferences + providing an useful companions guiding the user across the right platform. Starting on MaaS for an European roaming service.

- **Business analytics:** providing to the operating companies the means to understand and adapt their offer to a real time multi-modal demand

IP5: Technologies for Sustainable & Attractive European Rail Freight



IP5: key achievements and ongoing activities

- **Fleet Digitalisation/Automation:** automatic coupling (flexible wagon composition), CBM (data handling, analytics and dashboards), ATO/DAS (testing of ATO developed in IP2)
  - Multi-sensor obstacle detection up to 1km

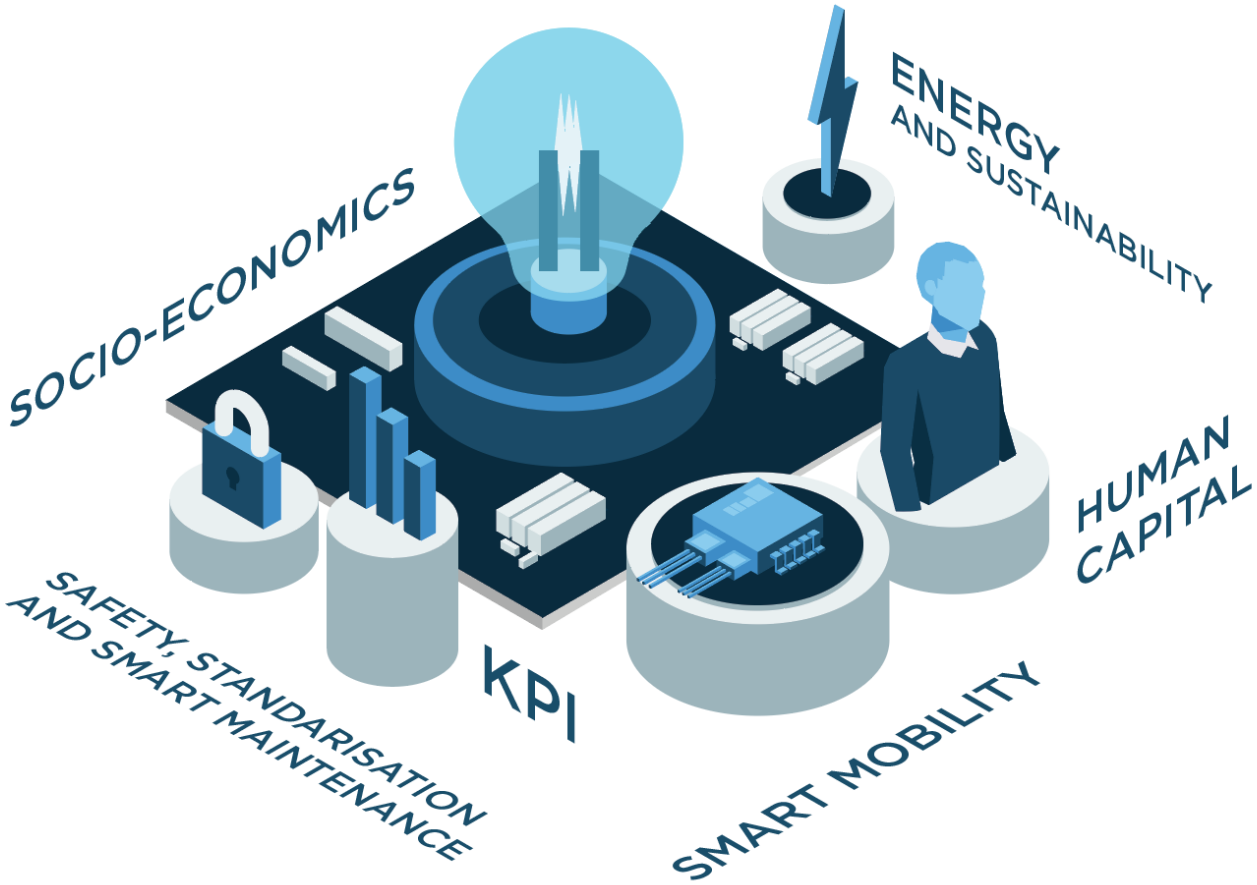
- **Transport Management:** IT solutions electronic communication technologies to maximise punctuality and capacity.
  - Intelligent Video Gate for high speed waggon scan and multi modal dispatching

- **Freight waggon concepts:** Low-noise, lightweight, high speed & track friendly Freight Running Gear & Modular lightweight freight wagon design
  - Automatic brake test and a new silence wheelset

DIGITAL BREAK TEST presented at InnoTrans2018

- **Freight Propulsion systems:** New freight locomotives with network independent operation capabilities, supporting increased train lengths up to 1500m, energy reduction
  - Demo on 740m long train: 2 locos being remotely controlled by the leading one (next step: 4 locos and increased lenght)

CCA: Cross Cutting Activities



CCA: key achievements and ongoing activities

- **Human Capital:** management of technological & demographical changes from the human factor's aspect
  - Impacts of the S2R innovations on rail employment and future skills
- **Safety, Standardisation, Smart Maintenance, Smart Materials & Virtual certification**
  - Standardisation Rolling Development Plan lists the potential needs and opportunities of the S2R innovations those feeds into standardisation
- **Noise & Vibration:** N&V management to be applied on an overall system approach and enable mitigation actions
  - Auralisation and visualisation technology InnoTrans
  - Tools and methods to improve prediction of noise from different sources on a system level and to rank railway noise mitigation options together with assessment of their cost-effectiveness

S2R R&I and synergies with ESIF in Smart Specialisation Strategy (S3) context

Join forces to strengthen competitiveness of railways

- S2R JU: Horizon 2020 funds for excellence in railway R&I
- ESIF: promote territorial cohesion
- ESIF S3 = Smart Specialisation Strategies on R&I: priorities to be developed by national/regional administrations as condition for receiving ESIF to contribute to regional economic growth
- S3 priorities can include transport/logistics/mobility/railways related topics
- S2R JU cooperation with EU-regions with these related S3 priorities
- Respect separate funding processes and rules of each funding authority
- S2R JU Members could help authorities to identify projects complementary to S2R activities to promote synergies

POTENTIAL BENEFITS AND OBJECTIVES

Strengthen R&I investments and innovation capacity through collaboration with leading global players

Enhance the European dimension of the regions in railways, that can take a leading role in their country/region

Identify areas of technical cooperation which could complement the S2R programme and support its overall objectives, e.g. by developing demonstration activities in a given region/MS territory based on the latest technology.

Achieve an **overall leverage effect** from synergies between ESIF, S2R funding, and other national and regional funding.

WHY COLLABORATE

1. Access to active **international networks** through the JU, including research institutes and leading businesses;

2. Access (e.g. for SMEs) to an important **critical mass** from the private sector;

3. Cooperation with S2R JU projects that are closer to the market and have **higher Technology Readiness Level (TRL);**

4. Critical mass to **attract the scientific community** at large, which JUs also provide even if their research fields are closer to market uptake;

5. Easier **deployment of the JUs R&I results** as regions and MS would be better informed of the progress achieved, e.g. by being involved in previous demonstration phases;

MODES OF COOPERATION

Operational collaboration:

A collaboration could include the creation of synergies at strategic level e.g. by alignment of research agendas and Smart Specialisation Strategy (S3) priorities to make them more specific and market-oriented.

Another type of operational collaboration is through the creation of synergies by using ESIF funds complementarily to S2R, for example by implementing support and training activities and the infrastructure necessary for the JU or by supporting testing and demonstration activities.

Strategic collaboration:

A Memorandum of Understanding (MoU) is a strategic instrument to **enhance cooperation** with Member States and Regions, as well as to facilitate synergies with ESIF. It follows the **Research and Innovation S3** and the applicable ESIF regional funding instruments which can identify thematic objectives or align regional funding instruments to support possible pilot projects.

SYNERGY SCENARIOS APPROACH FOR FUNDING RELATED OPERATIONAL COLLABORATION

Upstream support: ESIF support for developing capabilities, skills and infrastructures in support of local stakeholders, aiming to enhance regional capabilities in railways R&I and any eventual participation in S2R

Sequential funding / downstream support: S2R beneficiaries may propose a continuation, spin-off or amplification of their activities with ESIF support.

Thematic approach: ESIF support to complement S2R funding through relevant R&I thematic calls. R&I topics shall be agreed with S2R, be consistent with Research and Innovation S3 priorities and contribute to the overall objectives of S2R but are not specifically addressed in S2R.

'Seal of excellence': If technically appropriate, top-ranked proposals in a S2R call (highly scored but not retained for funding) could be supported by S2R with a synergy label for ESIF funding.

FOUNDING MEMBERS

ALSTOM

BOMBARDIER

CAF

Hitachi Rail STS

NetworkRail

SIEMENS

THALES

TRAFIKVERKET

ASSOCIATED MEMBERS

amadeus · AŽD PRAHA · DB · DIGINEXT be visionary · Faiveley Transport A Wabtec Company · HaCon

indra · KNORR-BREMSE · kontron S&T Group · mermec AN ANGEL COMPANY · SNCF · Talgo

Virtual Vehicle Austria consortium+ (VVAC+)

virtual vehicle · WIENER LINIEN · FCP · TATRAVAGÓNKA POPRAD · getzner engineering a quiet future · ACT · KIRCHDORFER CONCRETE SOLUTIONS · Plasser&Theurer · mcl · voestalpine ONE STEP AHEAD. · PJM · AVL

European Rail Operating community Consortium (EUROC)

ÖBB Immer in Bewegung · bls · COMBOIOS DE PORTUGAL · Lik erne vira sto · PKP POLSKIE KOLEJE PAŃSTWOWE Spółka Akcyjna · SBB CFF FFS · ProRail · Infraestruturas de Portugal · TCDD · Slovenske železnice

Swi'Tracken consortium

RAILENIUM · Universidad del País Vasco Euskal Herriko Unibertsitatea · U.PORTO · TATA STEEL · University of Minho · vossloh · TRONICO · izt · egis · EURO TUNNEL

Smart DeMain (SDM) consortium

Strukton Rail · cemosa · Fraunhofer IVI · acciona · DLR

AERFITEC

AERnnova · FIDAMC · tecnalia Inspiring Business

Competitive Freight Wagon Consortium (CFW)

ConTraffic Consulting Network for Traffic System · DLR · DIE BAHNINDUSTRIE. VDB VERBAND DER BAHNINDUSTRIE IN DEUTSCHLAND E.V. · ceit IK4 Research Alliance · WBN

Smart Rail Control (SmartRaCon) consortium

DLR · RAILENIUM · ceit IK4 Research Alliance · NSL

Shift2Rail

Panel Discussion

Moderator:

Miroslav Haltuf, Vice-Chairman of the States Representatives Group, Shift2Rail JU

Panellists:

Christos Vasilakos, Policy Officer, Clean Sky JU

Ernesto Garcia Vadillo, Professor of Railway Engineering, University of The Basque Country

Frédéric Singer, Head of Strategic Industrial Sector Unit, Hauts-de-France Region

Keir Fitch, Head of Rail Safety and Interoperability Unit, European Commission

Christos Vasilakos

Policy Officer, Clean Sky JU

Regional Cooperation Workshop

Shift2Rail Panel discussion

Dr. Christos Vasilakos
Clean Sky JU

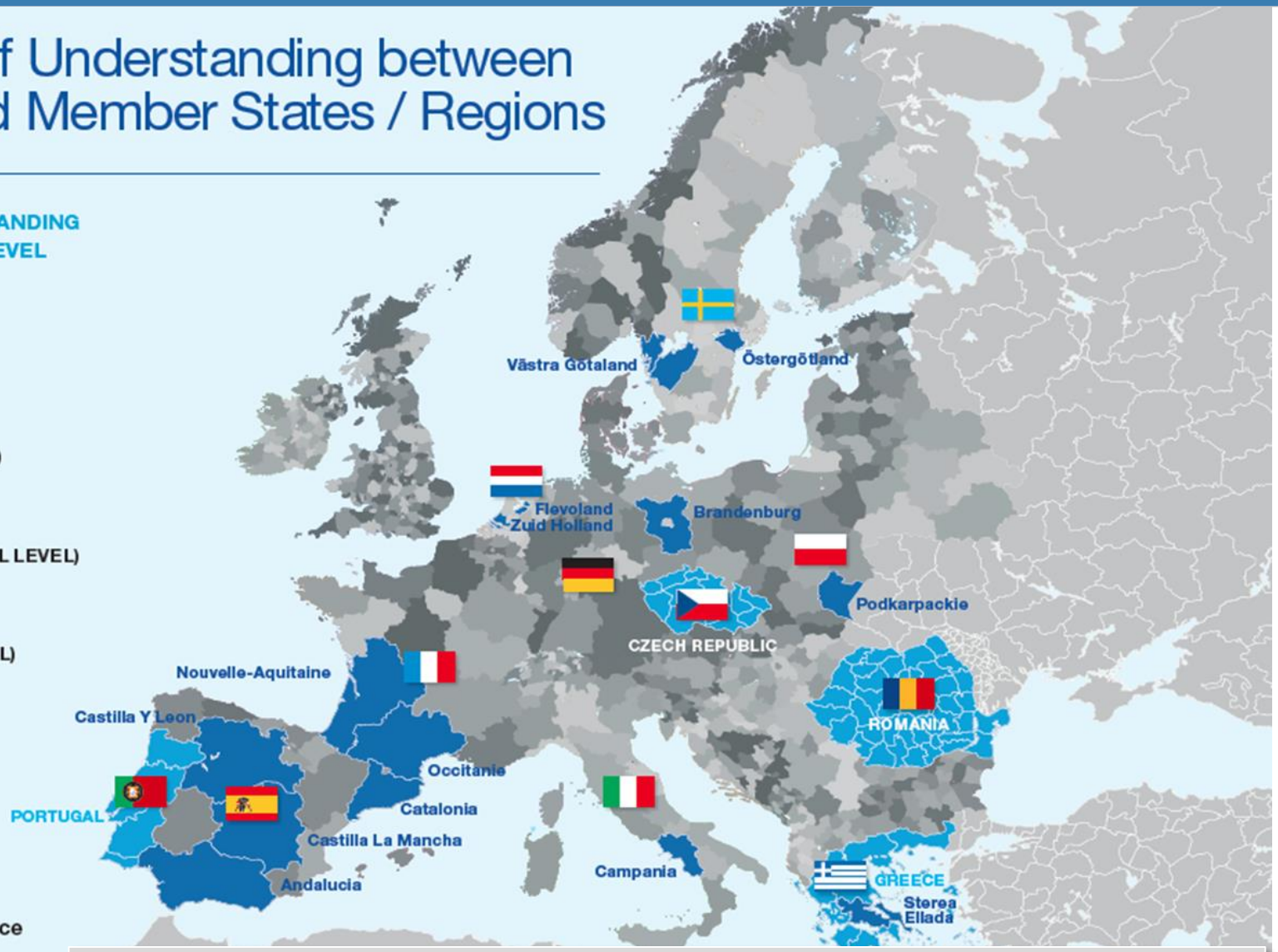
White Atrium, 9 October 2019

Clean Sky working with Member States and Regions

Memoranda of Understanding between Clean Sky and Member States / Regions

18 MEMORANDA OF UNDERSTANDING AT NATIONAL OR REGIONAL LEVEL

- OCCITANIE (FR)
- CATALONIA (ES)
- CASTILLA LA MANCHA (ES)
- VÄSTRA GÖTALAND (SE)
- ÖSTERGÖTLAND (SE)
- ROMANIA (NATIONAL LEVEL)
- ANDALUCÍA (ES)
- CAMPANIA (IT)
- CZECH REPUBLIC (NATIONAL LEVEL)
- ZUID-HOLLANDE (NL)
- FLEVOLAND (NL)
- PORTUGAL (NATIONAL LEVEL)
- CASTILLA Y LEON (ES)
- PODKARPACKIE (PL)
- GREECE (NATIONAL LEVEL)
- STEREA ELLADA (GR)
- BRANDENBURG (DE)
- NOUVELLE-AQUITAINE (FR)



Countries with a MoU in place

Regions with a MoU in place

>60 Regions/Countries with priorities in RIS3

Five Scenarios for Synergies with ESIF

- ✓ Upstream support and capability building (infrastructures / test facilities / demos / pilot lines for use in CS2, enhancing of local capacities)
- ✓ Parallel funding to complementary activities
- ✓ Sequential funding / downstream support (e.g. towards industrialization)
- ✓ Thematic calls
- ✓ Seal of Excellence type – the CSJU synergy label

- ✓ **By October 2019**

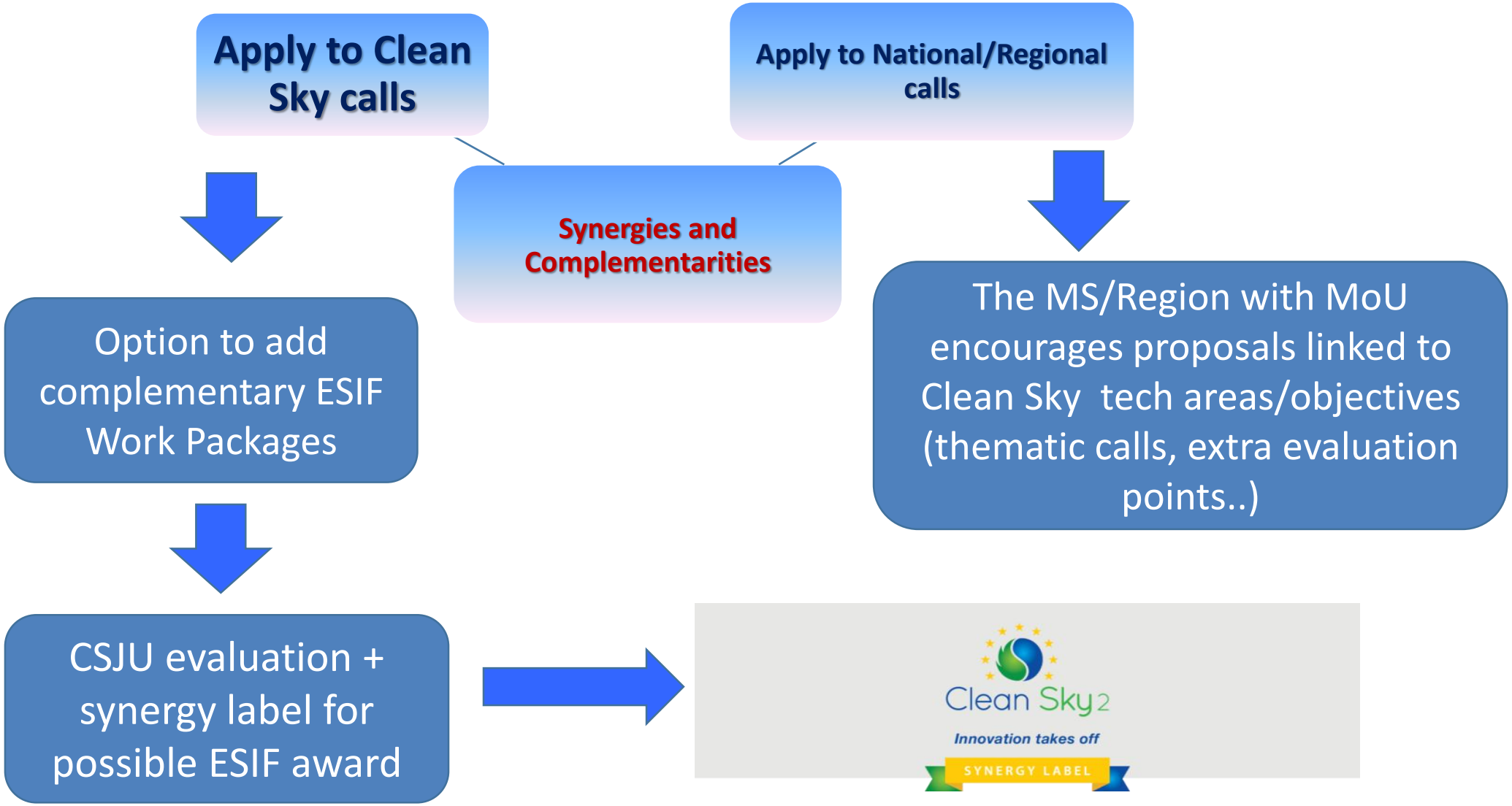
18 MoUs

> 40 pilot projects

~ € 50M funding

11 Synergy Labels

Certificate delivered by the Clean Sky 2 Joint Undertaking


Apply to Clean Sky calls
Apply to National/Regional calls
Synergies and Complementarities
Option to add complementary ESIF Work Packages
The MS/Region with MoU encourages proposals linked to Clean Sky tech areas/objectives (thematic calls, extra evaluation points..)
CSJU evaluation + synergy label for possible ESIF award
Clean Sky 2
Innovation takes off
SYNERGY LABEL

Clean Sky working with Member States and Regions: best examples

- Clean Sky is working closely together with European regions to **support their RIS3 priorities** which are often closely linked to Clean Sky scope and objectives

- **National / Regional calls support complementary activities to Clean Sky programme**
  - Greece pre-announced a funding scheme within the framework of the MoU, to support complementary activities to Clean Sky 2 calls, with a budget of € 2M
  - Occitanie call (Readynov) (FR): supported 8 pilot projects (~ € 4.5M) and the new call is open till 2021
  - Campania regional call (IT): supports 8 pilot projects with a budget > € 10M
  - Czech Republic national call funded 6 projects (~ € 4M)
  - Västra Götaland and Östergötland regions (SE) support 7 pilot projects (> € 6.5M) linked to Clean Sky activities. Aerospace Cluster Sweden (ACS) is also supported by regional funds
  - South Holland region supports the Composite Automation Development Center (CADC, budget >€ 4.5M) that creates synergies with Clean Sky programme

Romania Pilot Project

RoRCraft project approved by the national authorities, as complementary to Clean Sky 2

The activities proposed in **RoRCraft CompAct** are complementary with the activities of the RoRCraft – RotorCraft fuselage manufacturing for the **RACER demonstrator**, project under Clean Sky 2 JTI-CS2-2014-CPW01- FRC-02-01

Objectives: the project aims to enhance the capabilities to design, manufacture and certify according to airworthiness regulations large hybrid (metal – composite) airframe structures.

Total Budget: 9.022.543,20 RON (approx. € 1.93 million)
ESIF contribution: 8.998.543,20 RON (approx. € 1.9 million)
Starting date: 1st February 2018 – duration: 25 months
Clean Sky Synergies Scenario 2: ESIF Parallel funding,
Participants: INCAS – National Institute for Aerospace Research 'Elie Carafoli'

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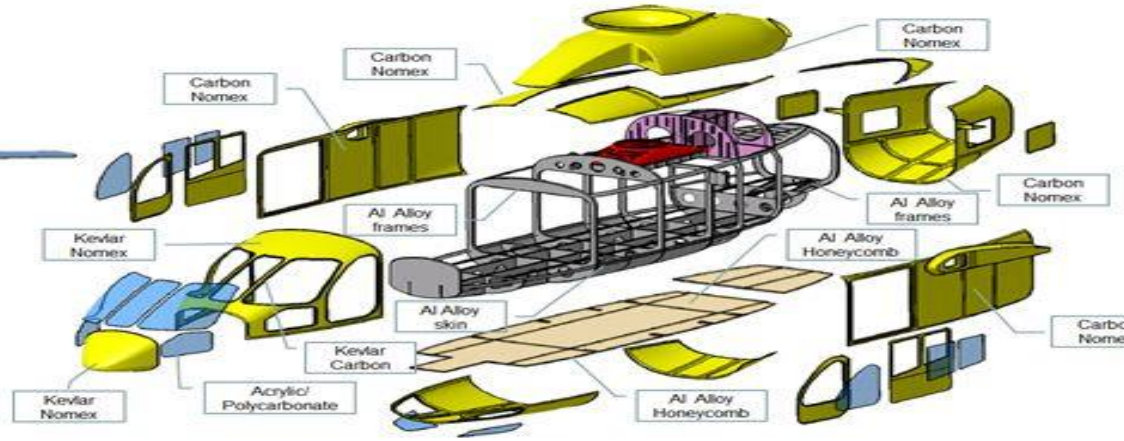
CleanSky 2 – RoRCopter airframe for LifeRCopter



Ernesto Garcia Vadillo,

Professor of Railway Engineering, University of The Basque Country

Regional Cooperation Workshop

Shift2Rail JU programme - Basque Region

Prof. Ernesto G. Vadillo
Univ of The Basque Country
Euskal Trenbide Sarea - Basque Railways Network
Basque Region Government

Brussels, 9 October 2019

Outline

1. Basque S3 priorities
2. Basque Regional roadmap for rail
3. Reasons for cooperation with the S2R JU through a MoU
4. Goals of the MoU

1. Basque S3 priorities:

Described in the: “PCTI EUSKADI 2020 - Research & Innovation Smart Specialisation Strategy - RIS3”, as:

*“Advanced manufacturing: Research and development directed towards industrial sectors related to transport - specifically automotive, aeronautics, **rail** (…)”*

“The railway Industry in The Basque Country: more than 7,000 workers, and Represents 40% of this Industry within Spain”
Mrs. Arantxa Tapia, Basque Minister for Economic Development and Competitiveness (London), April 11, 2018

Spanish population: 47.000.000
Population in the Basque Country: 2.200.000

2. Basque Regional Roadmap for Rail:

Rail Research and Innovation Platform of the region of The Basque Country (under the sponsorship of The Basque Government).

Main Basque stakeholders:

Railway Vehicle industry

Running above 300 km/h

OARIS-CAF

AVRIL-TALGO

Infrastructure managers:

euskal trenbide sarea

metro bilbao

adif

Railway undertakings – train operators:

renfe

euskotren

Conecta, Pinta, Pivot…

2. Basque Reg. Roadmap for Rail (cont):

Main Basque stakeholders (cont):

360 km/h–220 km/h

Straight track – diverging track

- S&C
- Swing nose crossings
- Multi-drive switches

JEZ SISTEMAS FERROVIARIOS

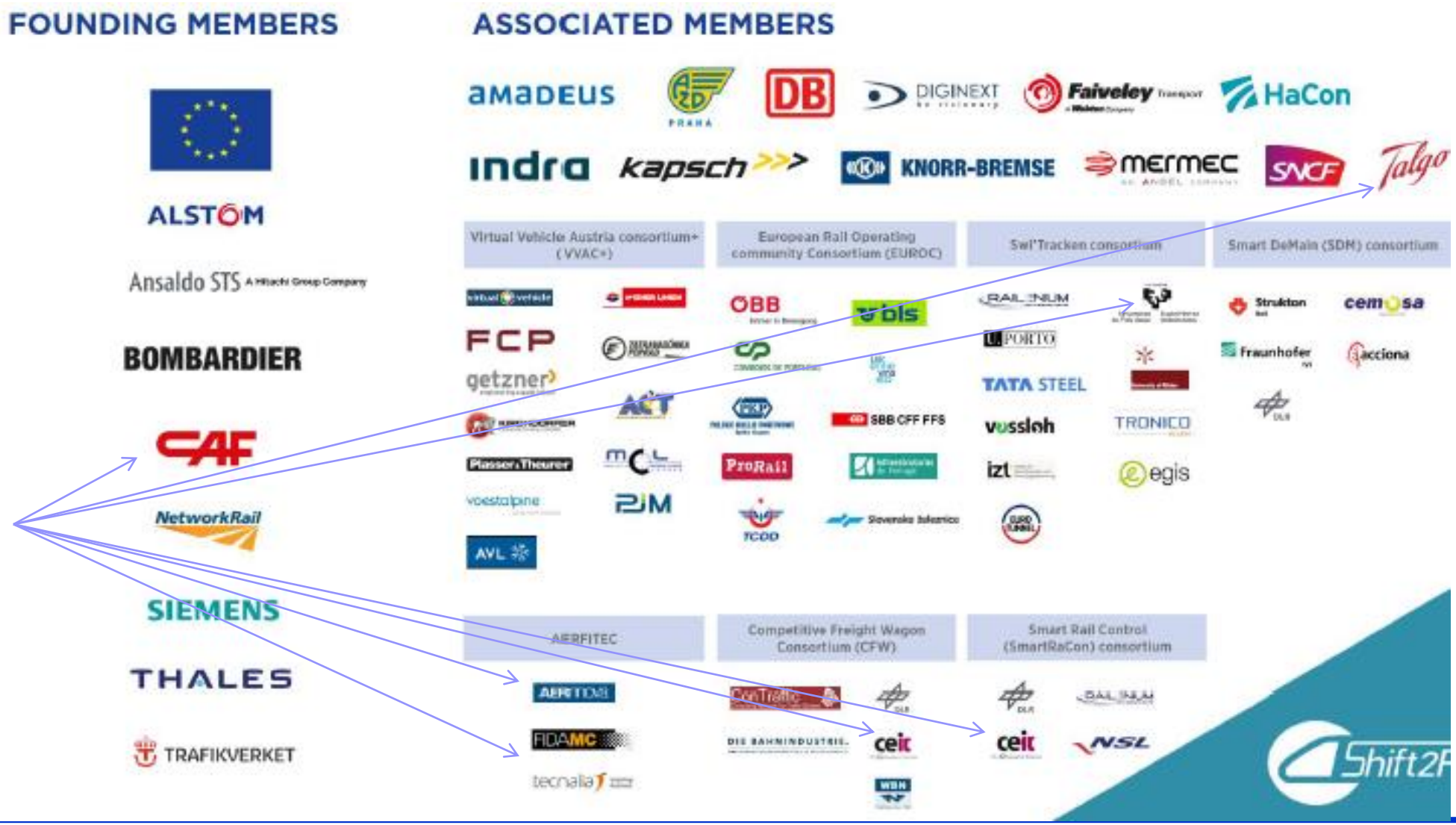
amurrio ferrocarril y equipos, s.a.

62 additional Basque companies in the railway sector

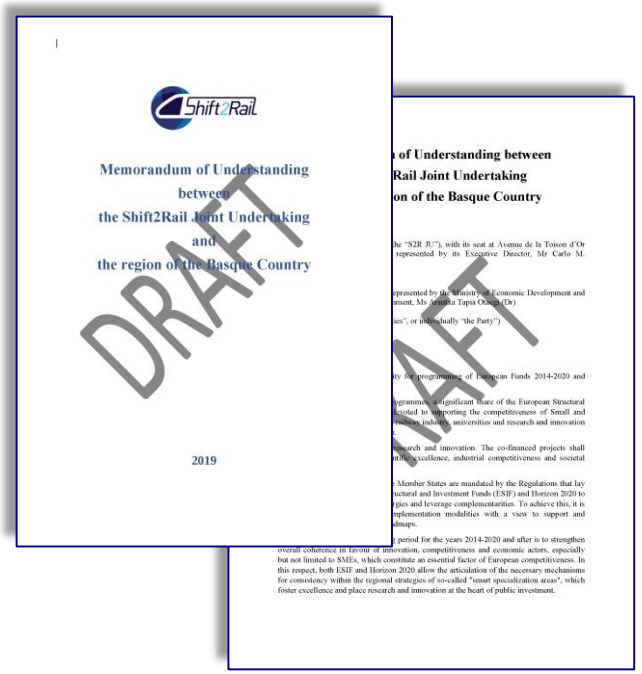
Academ: Univ of The Basque Country; Mondragón; Deusto

Research Centres:
Basque Research and Technology Alliance (BRTA), 22% of the R&D investment in the Basque Country
3,542 researchers; 16 centres

3.Reasons for cooperation with the S2R



4. Goals of the MoU



- *Identifying the complementary areas of activities initiated and foreseen under the competences of the S2R JU and the activities covered by the Operational Programme Transport, particularly through the "Intelligent Specialization Strategy of the region of the Basque Country RIS3" promoted by Europe and the "Science, Technology and Innovation Plan Euskadi 2020";*

- *In relation to the calls launched by the possible successor of S2R JU or the calls launched by the region of the Basque Country, in particular the call(s) "Research Projects HAZITEK, ELKARTEK and BIKAINTEK", promoted by the Economic Development and Infrastructure Department of the region of the Basque Country Government, intended to accompany the development of projects.*

Many Thanks

Frédéric Singer

Head of Strategic Industrial Sector Unit, Hauts-de-France Region

Hauts de France region

SITUATION ET ACCESSIBILITÉ
un concentré d'échanges

Coeur du bassin de consommation le plus riche d'Europe

1 500 milliards d'euros de pouvoir d'achat et 78 millions d'habitants à 300 Km

Source : PH experian / SNCF / Aéroports

project:center

6 Million inhabitants

154 bilions GDP

Hauts de France region

Smart Specialisation Strategy

- **Transports & Ecomobility**
- **Care and food industries**
- **ICT&IOT**
- **Chemicals, materials and recycling.**
- **Digital images and creative industries**
- **Energy**

1st french Region for Railway Industry

Région Hauts-de-France

3 World class manufacturer (SIEMENS – ALSTOM ; BOMBARDIER, MILLET AFR)

200 suppliers & SMEs
14 000 employes

40% of the national production
1 + billion € turnover / year

Railway Stakholders

- European railways agency (2004)
- Cluster, 130 firms (1995)
- National certification agency (1997)
- Centre d'Essais Ferroviaire (1998)
- Public railway safety agency (2006)
- Research federation for transports & mobility (2017)
- Competitivness cluster(2005)
- Technological Research Institute (2012)
- Transalley, mobility technopolis(2008)

Railway industry Roadmap

- Railenium (Technological Research Institute)
- Improve testing facilities
- Developp business for with AIF cluster
- Support grouping of compagnies
- Developp railway freight
- Developp a regional dismantling sector
- Think ahead for human resources evolutions
- Simplify procedures
- Secure competences through « buy european act »

ESIF / Railway sector

- ERDF for a common found for innovation (together with Public Investment Bank) for SMEs
- ERDF for innovation projects (for groups)
- ERDF for clusters structural projects

RECORD INTERREG Europe Project

- Improve use of ESIF regarding innovation for railway sector SMEs by sharing best practices
- 5 partners :
  - Hauts de France (Region + i-Trans cluster as lead partner)
  - ITAINNOVA – Technical Institute of Aragon, Spain
  - DITECFER - District for Rail Technologies, High Speed, Safety & Security S.c.ar.l., Italy
  - Västmanland Region, Sweden
  - Technical University of Kosice, Slovakia
- Outputs : redesign 6 policy instruments to improve the implementation of regional development policies and programmes

Keir Fitch

Head of Rail Safety and Interoperability Unit, European Commission

European Commission

Towards the railways of the future

Regional Cooperation Workshop
Brussels, 9 October 2019

Keir Fitch
HoU Rail Safety and Interoperability
DG MOVE, European Commission

@Transport_EU

Mobility and Transport

CONNECTING EUROPE

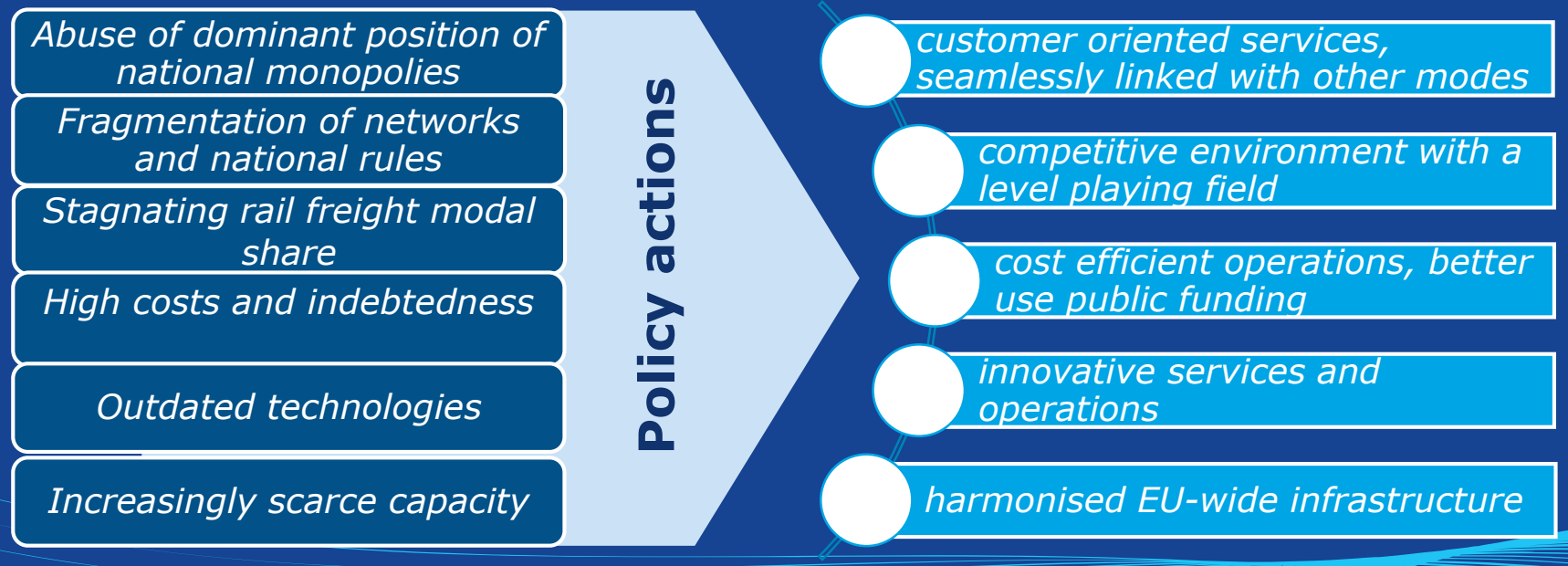
Rail is the backbone of EU connectivity:

- Daily rail moves 4 million tonnes of freight (modal share land transport 17%) and nearly 25 million passengers (modal share 7%)
- At the same time - only 2.4 % of the energy consumption in land transport
- Directly employs over 1 million people
- Safest modes of transport land transport
- Passenger services – increasing, 94% national, 65% covered by public service contracts
- Freight services - still recovering from the 2009 crisis, more than 50% international, market based
- More than EUR 33 billion under EU 2014-2020 financial framework, 70% of CEF funds

Critical to the EU strategy for a sustainable transport sector,

essential for economic and social cohesion

Single European rail area



Rail Policy actions

Market Pillar

- **Open markets** for services, incl. competitive tendering of public service contracts
- Access to **rolling stock** and **service facilities**
- **Rail Freight corridors** for competitive freight services

Technical Pillar

- **TSIs and ERA** as system authority – removing technical and operational barriers between national networks
- **ERTMS** – common signaling system
- **Shift2Rail** – scaling up innovation

Across the board

- **Transposition and application** of EU law
- Developing a framework for **digital EU-wide rail services**, incl. capacity management, automated services, data sharing, ticketing
- Market and safety **monitoring**
- **Stakeholder engagement** via platforms

Multiannual Financial Framework 2014-2020

Fostering connectivity and innovation:

- Ca. €100 billion of EU spending in transport under the current MFF (2014-2020)
- Create and implement innovative solutions for safer, more sustainable and smarter mobility
- Horizon 2020: from technology research to solving societal challenges
- Connecting Europe Facility (CEF): Build safe, sustainable, smart and efficient transport networks and complete by 2030 the TEN-T core network corridors, synergies with energy and digital parts of CEF

Key challenges:

- Unlock private investments
- Infrastructure investment gap
- New solutions for climate action, transport safety and digitalisation
- Strengthen EU industries' competitiveness

Rail R&I under Horizon 2020 (2014-2020)

Shift2Rail Joint Undertaking:

- Council Regulation (EU) No 642/2014
- Budget: EUR 450 million (EU) + 450 million (other members)
- 8 Founding Members and 19 Associated Members
- Master Plan: key priorities and the essential operational and technological innovations required to achieve the objectives

Expected impacts:

- Cutting the life-cycle cost of railway transports by as much as 50%
- Doubling railway capacity
- Increasing reliability and punctuality by as much as 50%
- Removal of technical obstacles to interoperability and efficiency
- Reduction of negative externalities (such as noise, vibrations,emisisons)

The next MFF, 2021-2027

- Clear encouragement for synergies between Structural Investment Funds and other EU programmes, particularly the InvestEU fund and Horizon Europe.
- Possibility for the Member States to transfer 5% of ESI Funds to any other EU instrument (such as a JU) to fund a project; the rules of the other instrument would apply.

→ Closer collaboration between regions and Member States managing ESI Funds and JUs

→ Member States/Regions to invest ESI Funds in scientific research areas under their S3 and in line with JU priority areas

→ Help certain regions to strengthen their international networks, position themselves within the context of EU funded projects and to integrate industry in the S3 process.

Rail R&I under Horizon Europe (2021-2027)

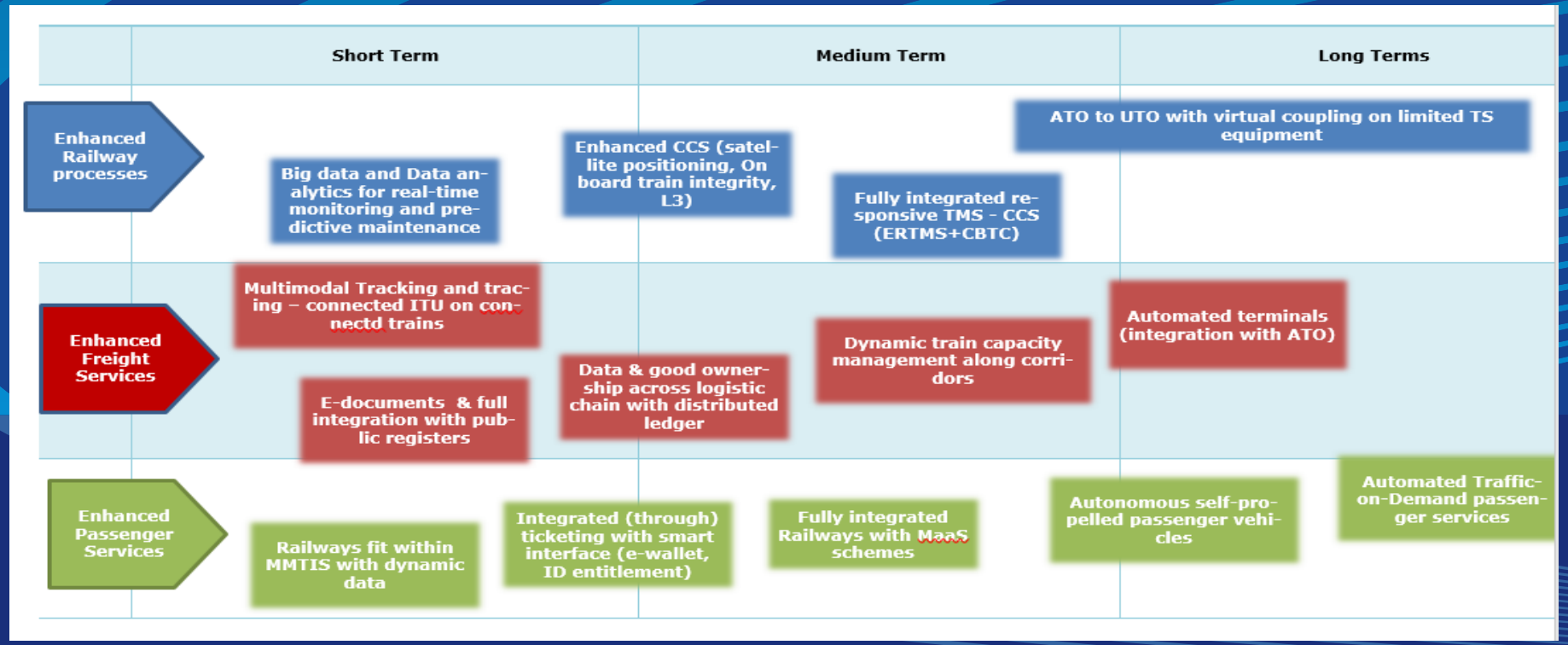
Candidate Partnership: Transforming Europe's rail system

- Specific objectives
  - Strengthening the role of rail in the transport system by increasing the cost-efficiency and reliability of EU rail services
  - Reinforcing the global technological leadership of the European rail industry
- Scope
  - System-integrated approach with decarbonisation, automation and digitalisation at the core
  - Stronger focus on freight, integrating rail into digital multimodal mobility and logistics chains
  - Introduce mechanisms to accelerate deployment and market uptake of innovations

European Commission

Rail Digitalisation

Mobility as a Service "MaaS" + Automated train operations "ATO"



Panel Discussion

Moderator:

Miroslav Haltuf, Vice-Chairman of the States Representatives Group, Shift2Rail JU

Panellists:

Christos Vasilakos, Policy Officer, Clean Sky JU

Ernesto Garcia Vadillo, Professor of Railway Engineering, University of The Basque Country

Frédéric Singer, Head of Strategic Industrial Sector Unit, Hauts-de-France Region

Keir Fitch, Head of Rail Safety and Interoperability Unit, European Commission

Closing

Carlo M. Borghini
Executive Director
Shift2Rail Joint Undertaking