







The Future of Rail Research & Innovation under Horizon Europe

24 September 2020

*based on the “draft proposal for the Transforming Europe’s Rail System
partnership” document of July 2020*

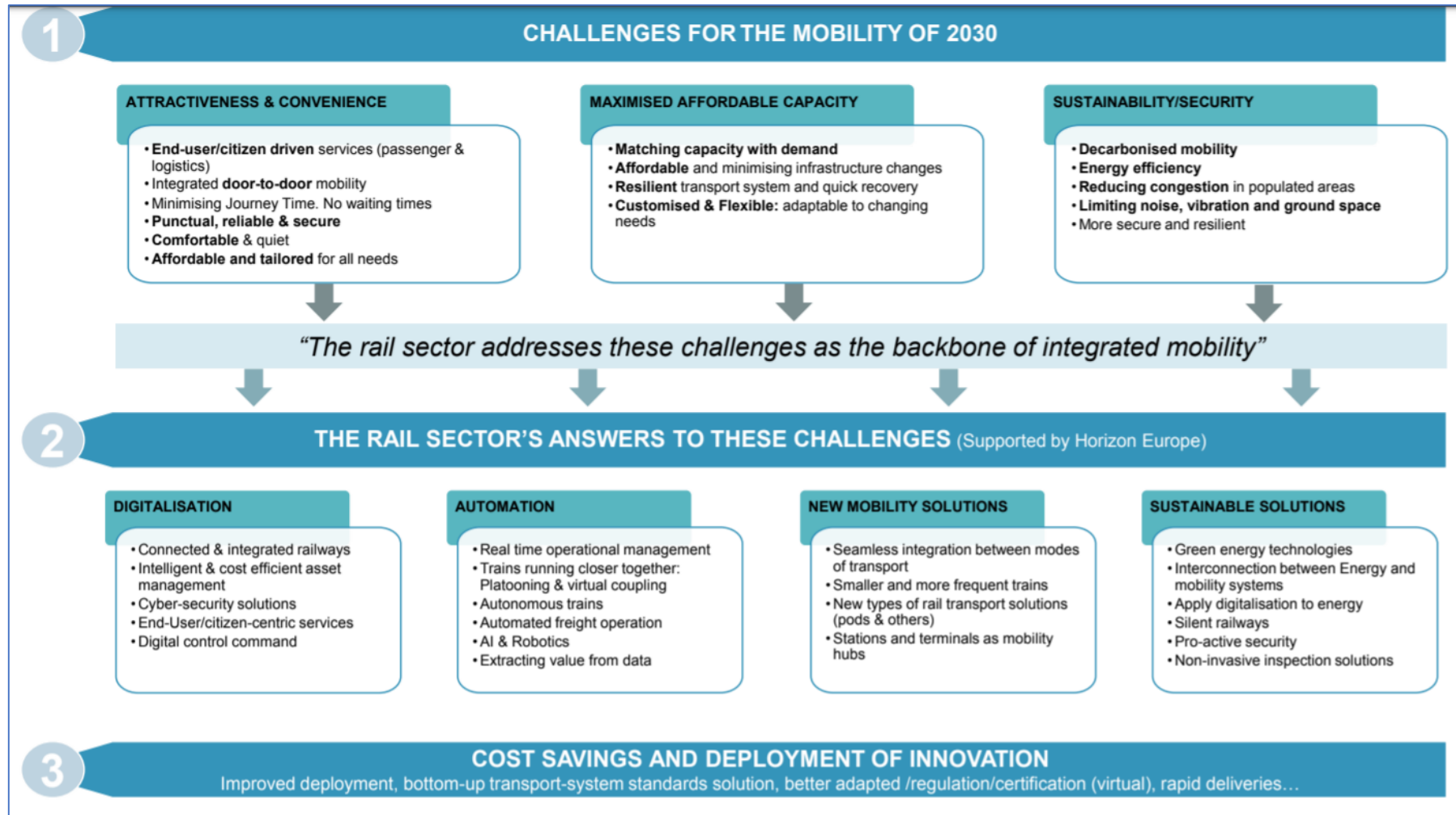
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S2R: an Integrated R&I Programme

					
CAPACITY INCREASE	OPERATION RELIABILITY	REDUCE EMISSIONS	ENERGY EFFICIENCY	LCC REDUCTION	INCREASE PUNCTUALITY

*Contributing to the achievement of the
Single European Railway Area (SERA)*

Context & Problem Definition: ERRAC



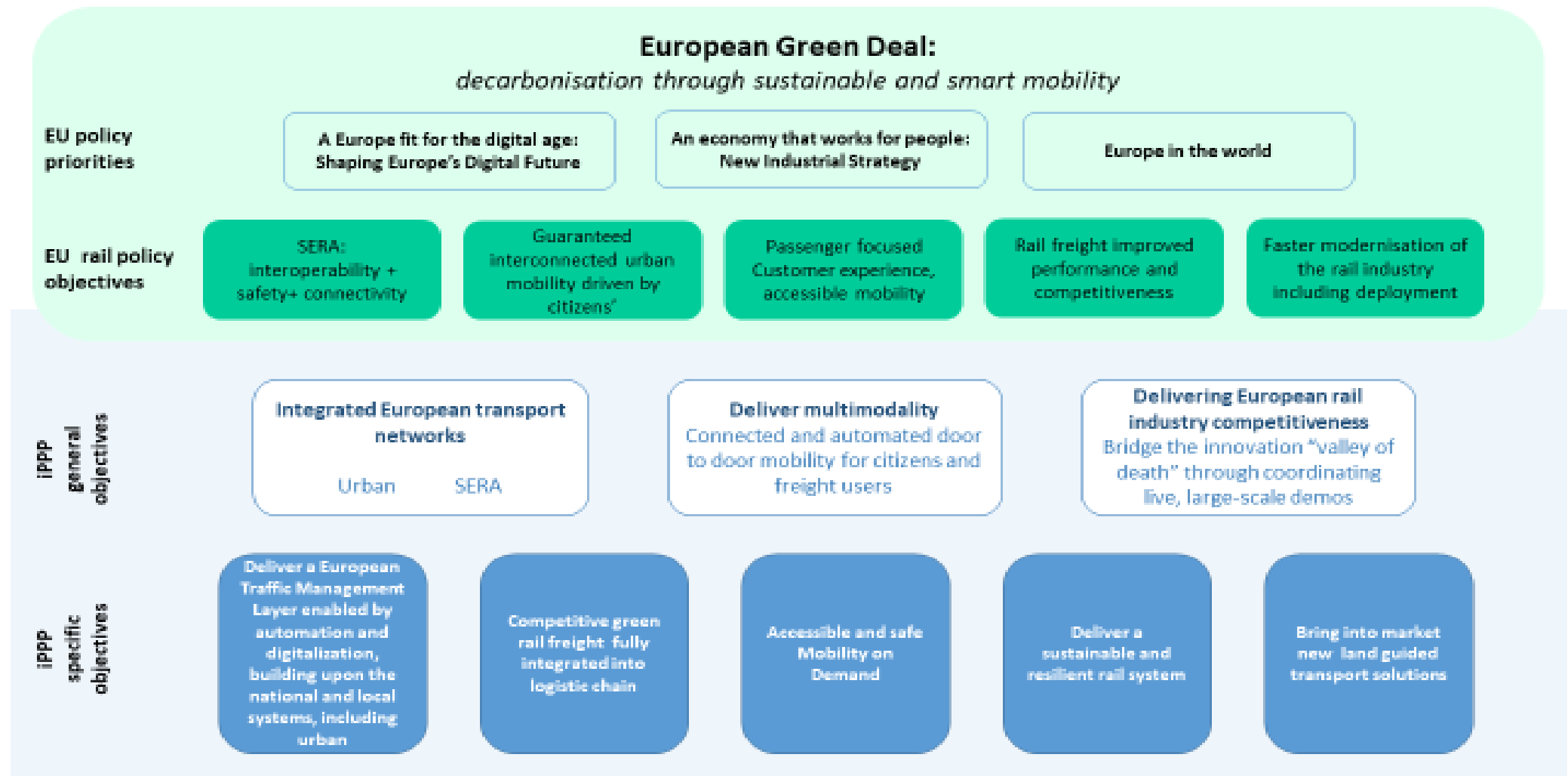
Necessity for a European Partnership

Accelerate development and deployment of innovative technologies (especially digital and automation) and deliver on European Green Deal objectives (e.g. shift substantial part of the 75% of inland freight carried today by road to rail and inland waterways). Outputs would become a mandatory part of the target rail system. Develop solutions with broad support across EU—up to 75% market uptake by 2030, improving the competitiveness of rail and support the European technological leadership in rail.

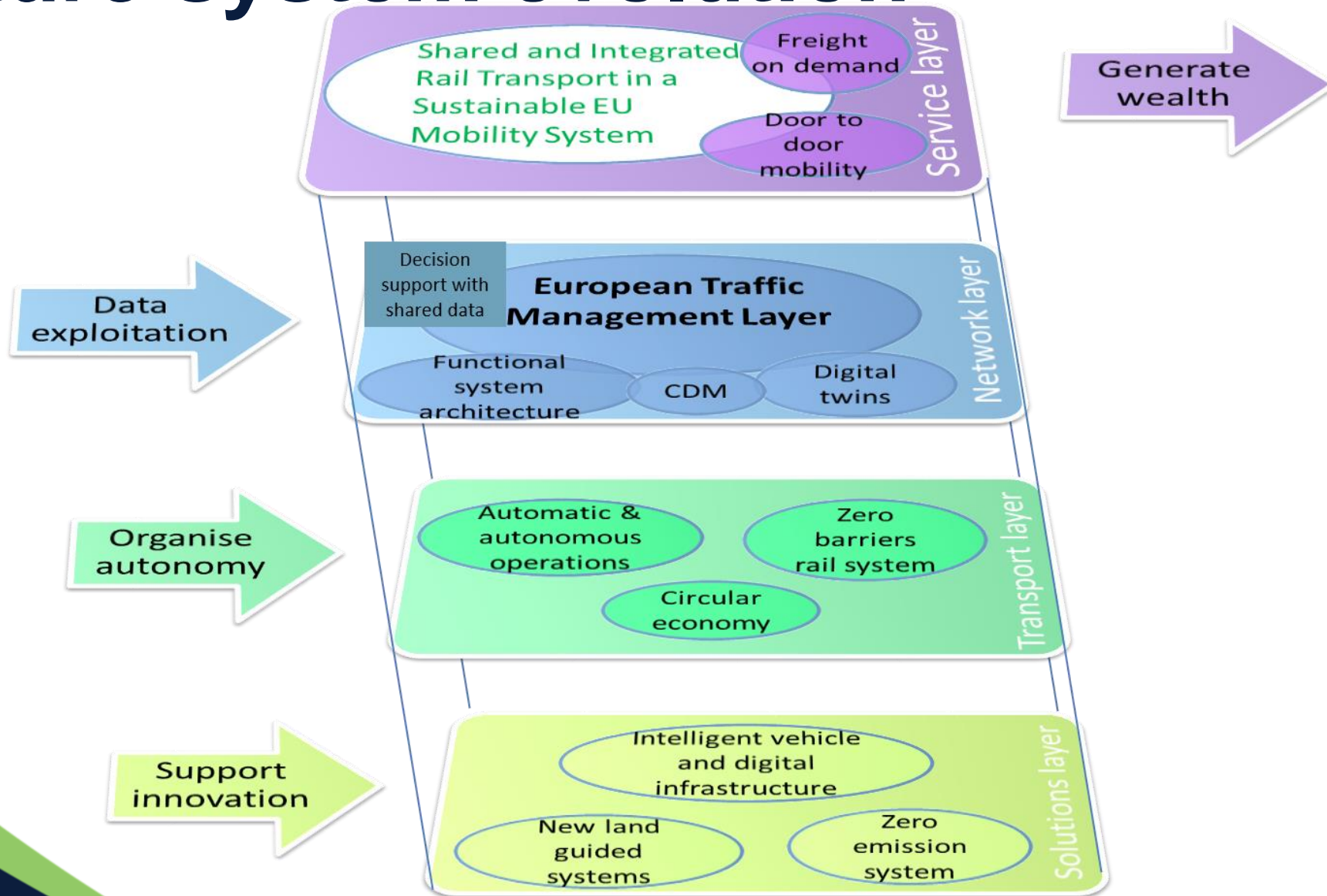
Requirements :

- Need to gather **diverse expertise** to bring innovation to the rail system
- **Long-term commitment of actors** involved on the basis of risk sharing and regulatory stability needs to be guaranteed
- **Contribution to policy** design and standardisation
- Efficient **cooperation** with other transport modes
- Synergies with other **European and/or National Programmes**

Common Vision, Objectives & Expected Impacts



Vision of the architectural layers for future system evolution

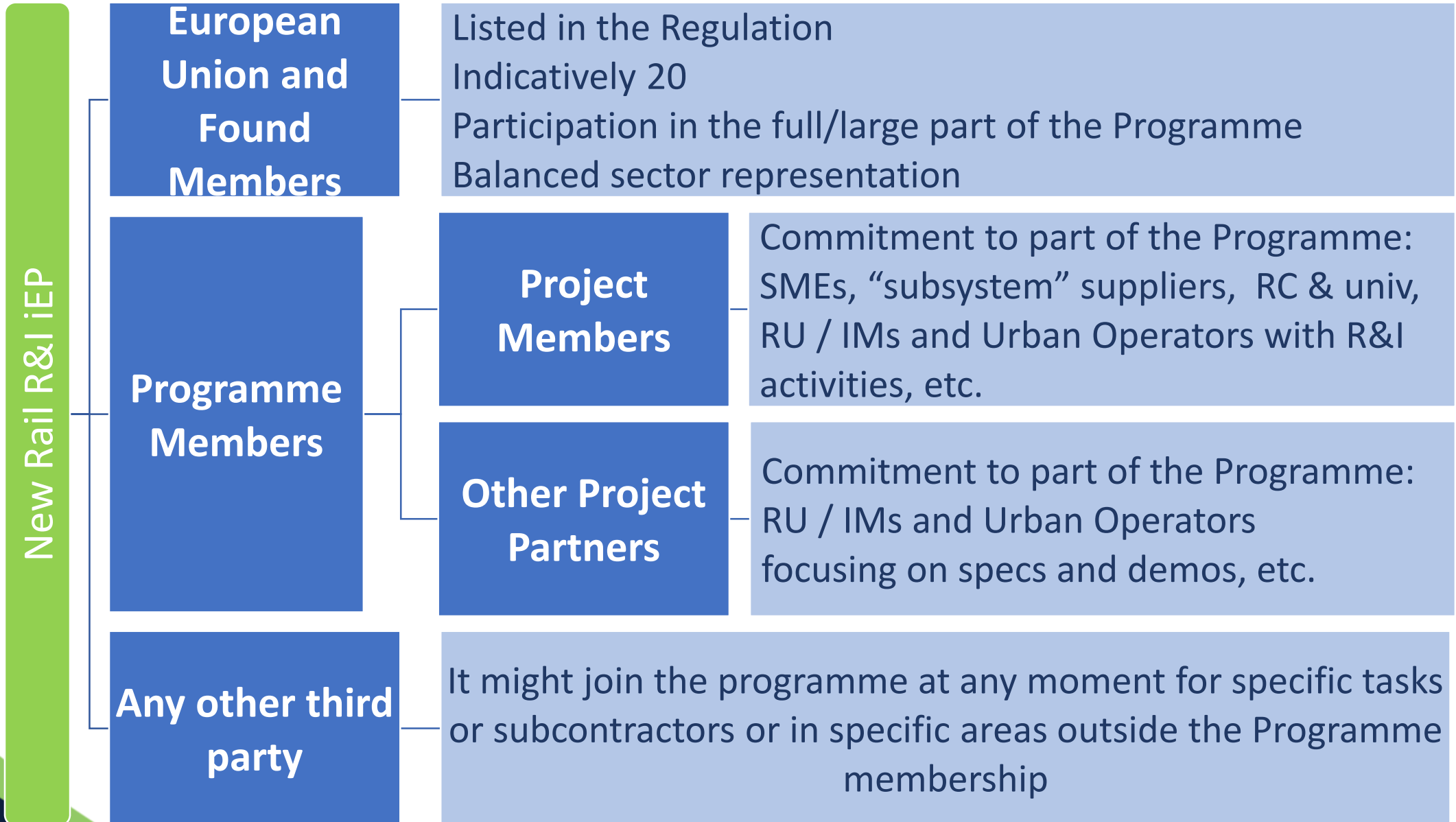


Target Groups & Stakeholders



- The operating community
- Manufacturers of rail systems
- Start ups
- The scientific community
- Freight forwarders and logistic providers
- Passengers
- Representatives of rail staff
- National Supervisory Authorities
- ERA
- EU standardisation bodies
- Sector Associations
- Others?

Partners' Composition

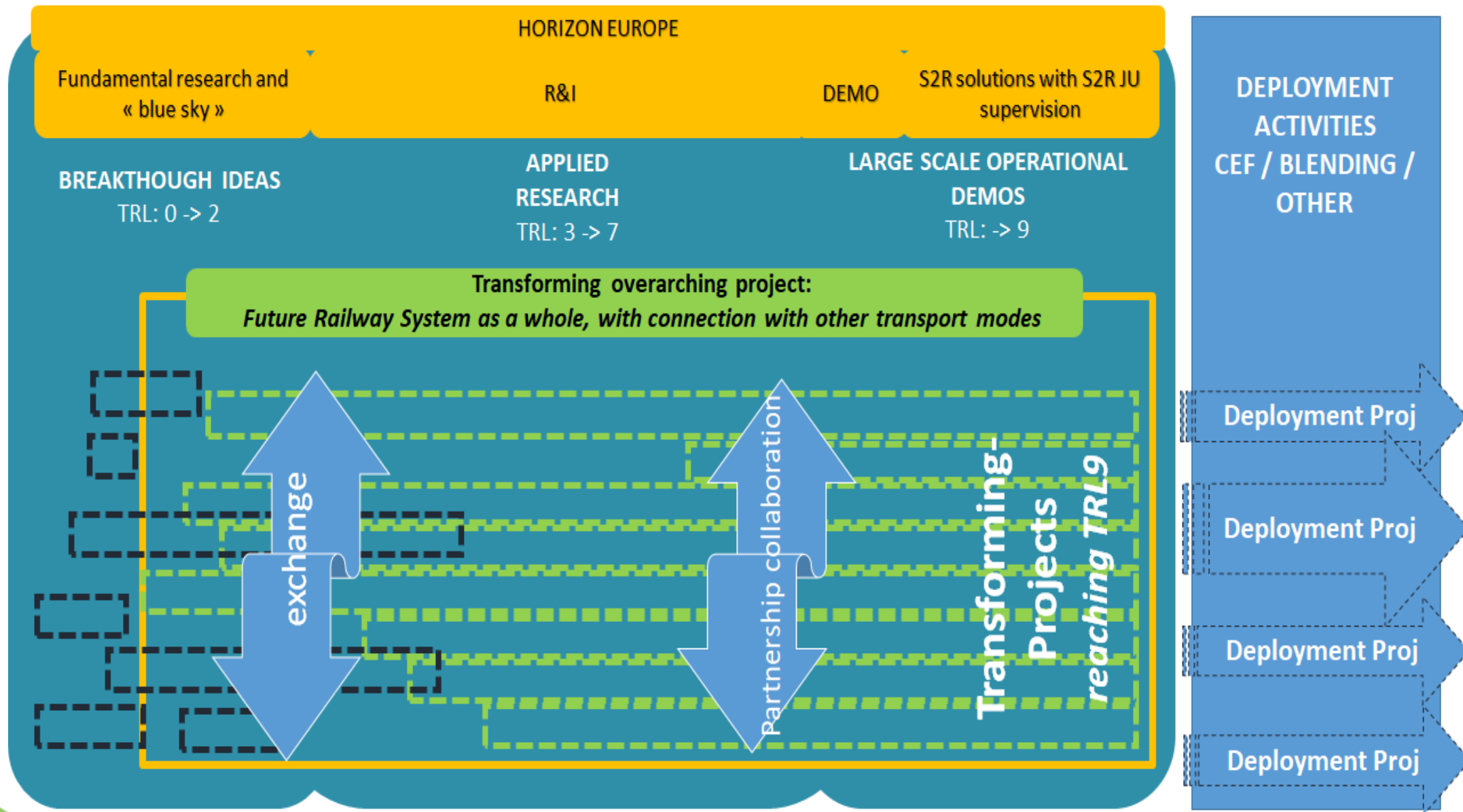


Governance: Lessons Learned from S2R JU

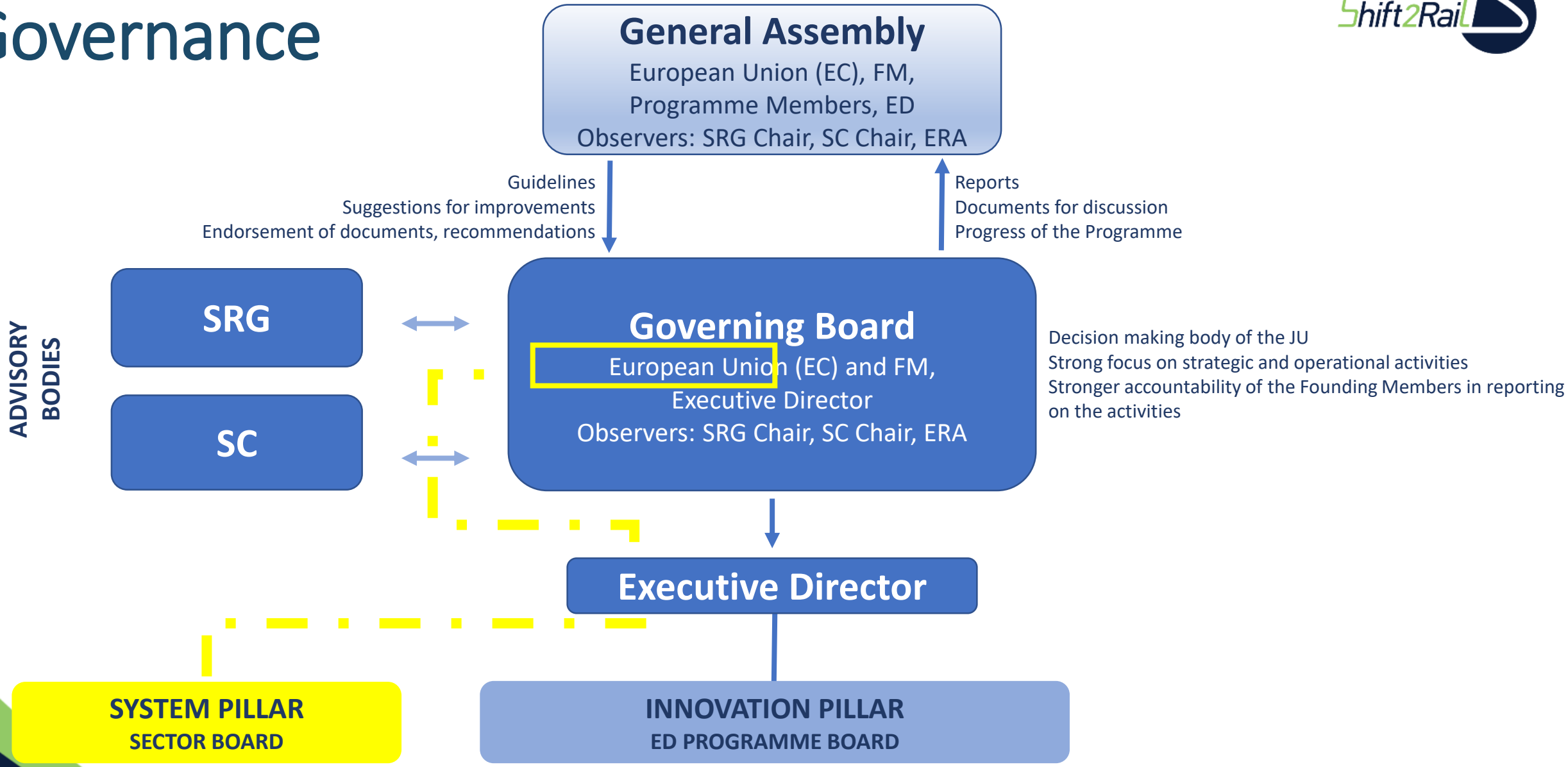


- **Clear distinction of competences**, to ensure the most appropriate delivery oriented approach and propose attractive ways to join the R&I work;
- **Transparent, simplified governance structure**: simple regulatory framework, to give the Governing Board the possibility to clarify the approach for programme implementation;
- **Emphasize commitment over representation**: incentivize the weight of SMEs and start-ups from across Europe;
- An **effective and efficient decision-making** process towards delivering an ambition Programme and,
- To take on board the programme **members with a key role in defining the specifications and requirements of future rail systems**, including urban, such as operators and infrastructure managers.

An integrated Programme for a complex system

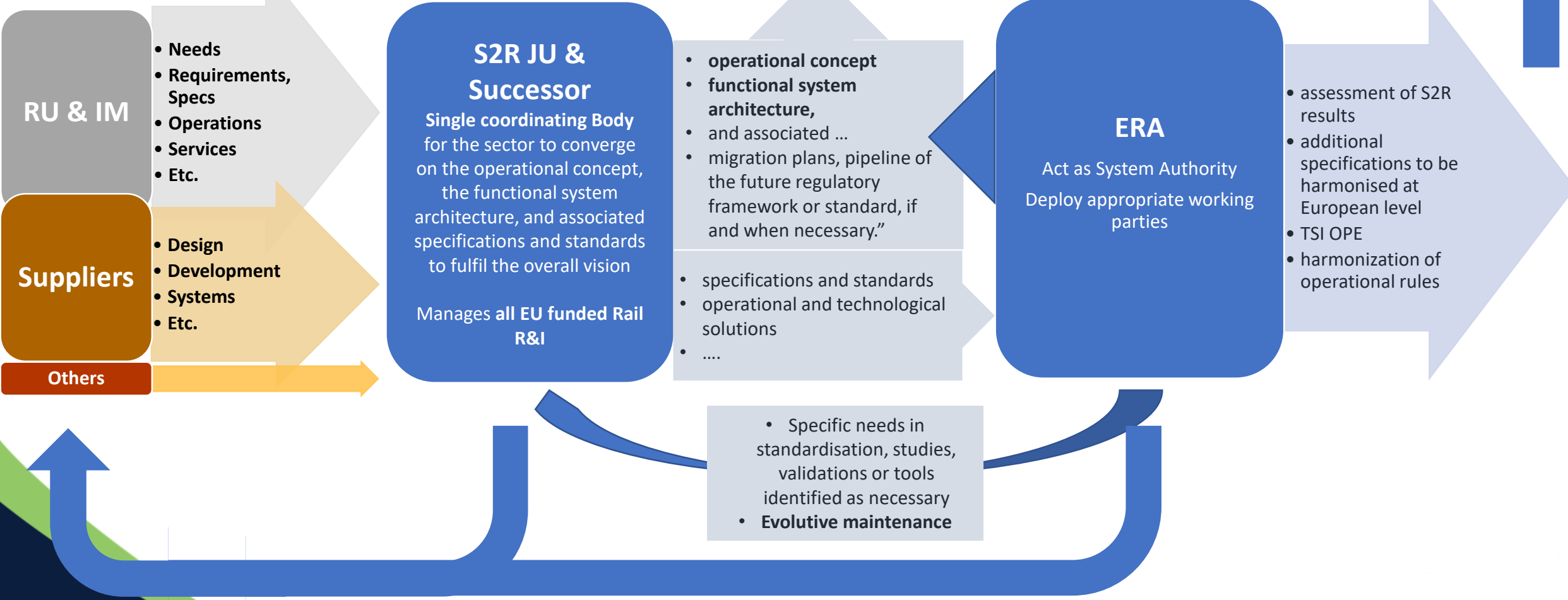


Governance



EUROPEAN COMMISSION (DG MOVE)

- Legislate (Interoperability/Safety Directives)
 - Strategic guidance on overall vision
 - Follow-up and monitoring
- Mandates for TSI change and standardisation requests



R&I Programme: the Transforming Projects



- ETML (European Rail Traffic Management Layer) and European Rail Network Manager
- Automated and/or autonomous and/or remotely piloted operations
- Railways Digital Twin, Simulation and Virtualisation
- Smart Asset Management and Maintenance of the Future
- Smart integration for door-to-door mobility
- Emerging Transport Models and Systems (Moving Infrastructure System (pods)/MaaS, hyper speed systems)
- Environmentally Friendly and Attractive Sustainable Mobility
- Rail as the backbone of a green freight logistic chain
- Network management planning and control
- Socio-economic area
- Safe and healthy mass transportation area

Thank you

Questions?

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