



# SP5 System Assessment and Migration to 2030/2050

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and SP5 partners



- Introduction SP5
- Roadmaps to 2050
- Scenarios and Assessment
- Migration

## Partner

ADIF

DB

University of Lisbon

University of Sheffield

TRL

TCDD

COMSA

NR

UIC

IK

# C4R breakdown structure



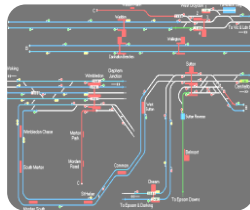
## SP1 - Infrastructure

Transversal approach for infrastructure solutions for conventional mixed traffic and VHS, integrated monitoring and power supply, reduced maintenance, highly reliable S&Cs



## SP2 - Freight

Longer trains, lower tare loads, automatic coupling, enhanced braking. Modern, automated, intelligent, fully integrated system for efficient, reliable, freight operations



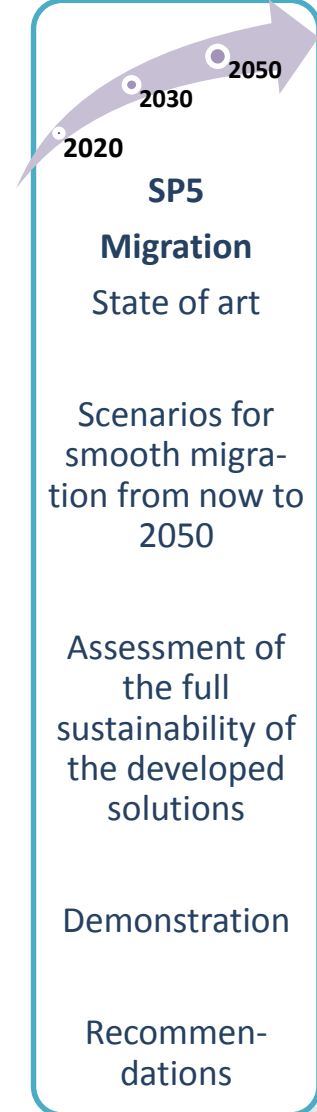
## SP3 - Operation and capacity

Traffic capacity computation for freight and passengers, models and simulators for planners: capacity generation, traffic flow, resilience to perturbations, ability to recover from disturbance, computerized real time info to customers and operators at any time.



## SP4 - Advanced monitoring

Integration of Advanced Monitoring Technologies in the design and built-in process for an easier-to-monitor (self monitoring) infrastructure with low cost and low impact inspection.



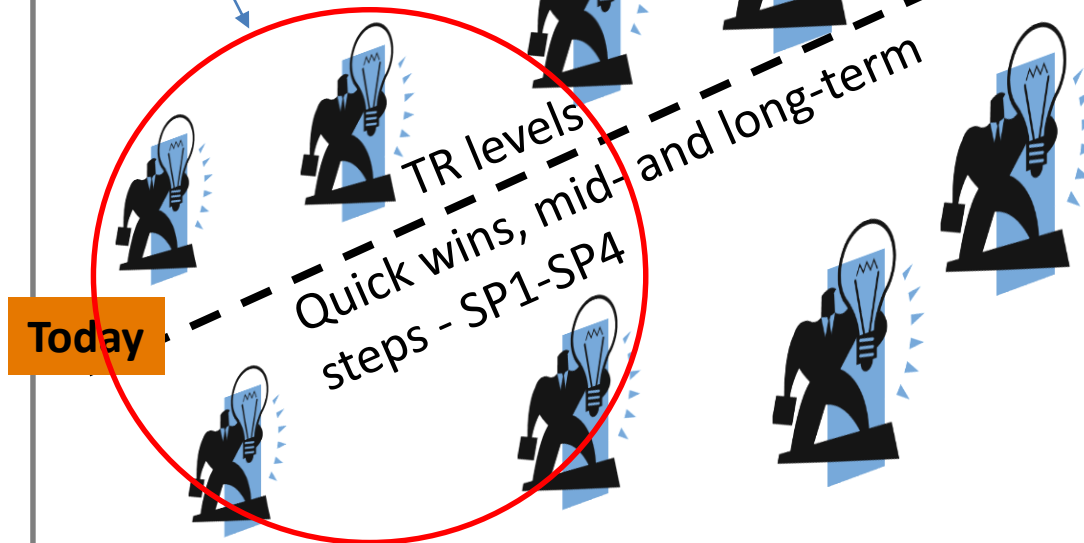
## Visions and the steps to reach

### Vision 2050 (SP5)



How does the railway system look like?

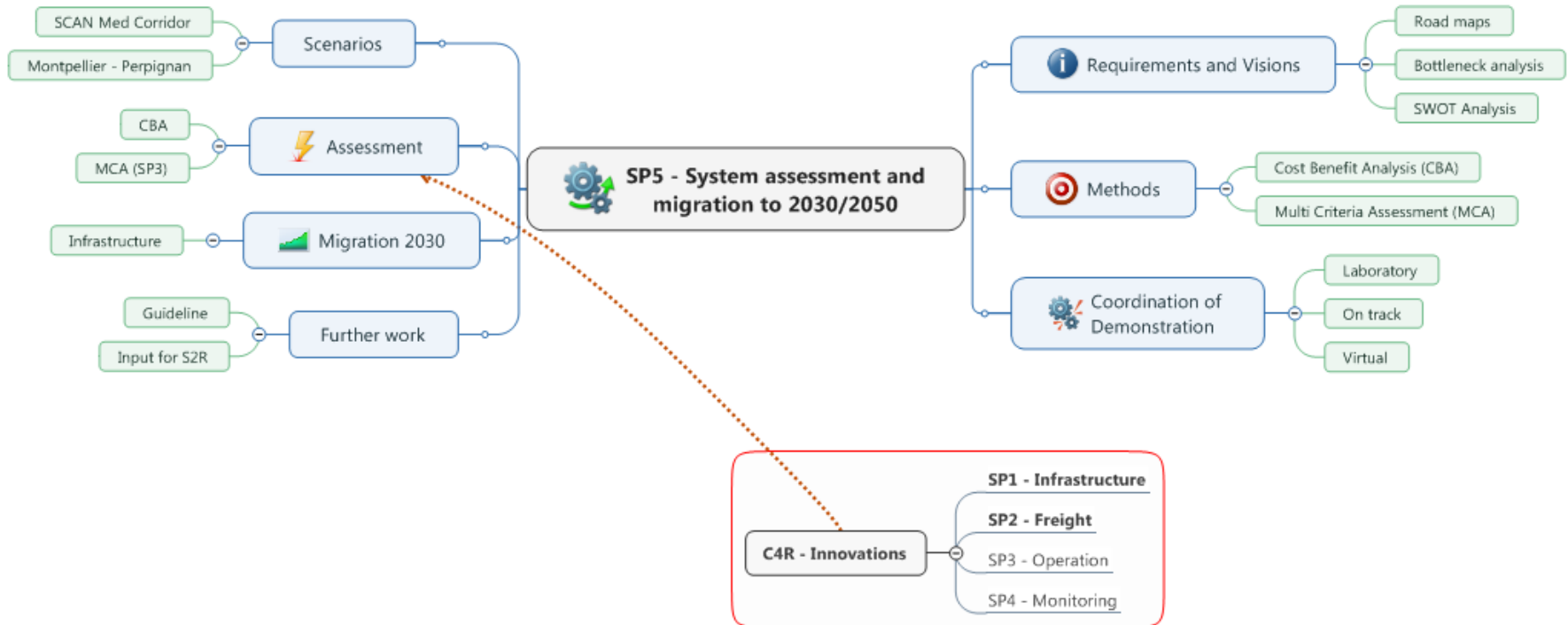
Demonstration or detailed analysis on real corridors



## Extraction of visions

- **24h/7day - Infrastructure**
- **Modular infrastructure** which is adaptable to further requirements (I)
- **Adaptable and predictive maintenance strategies** (M,I)
- **High speed freight trains** with up to 200 km/h (F, I)
- **Each 15 minutes runs a passenger train** on more than 30 % of the network (I, O)
- **Cross-border interoperability** across Europe through the creation of a single standard for railway signalling (S)
- **Reduced complexity - No catenary** – power supply by conductor rails and fuel cells (I, F, P)
- **Long trains with up to 1400 m** with a single or two locomotives (F,I)
- **Trains know and report their parameters** like length or axle load (M,O)
- **50 % shift** from road to rail (O,S)

# The work of SP5 - overview



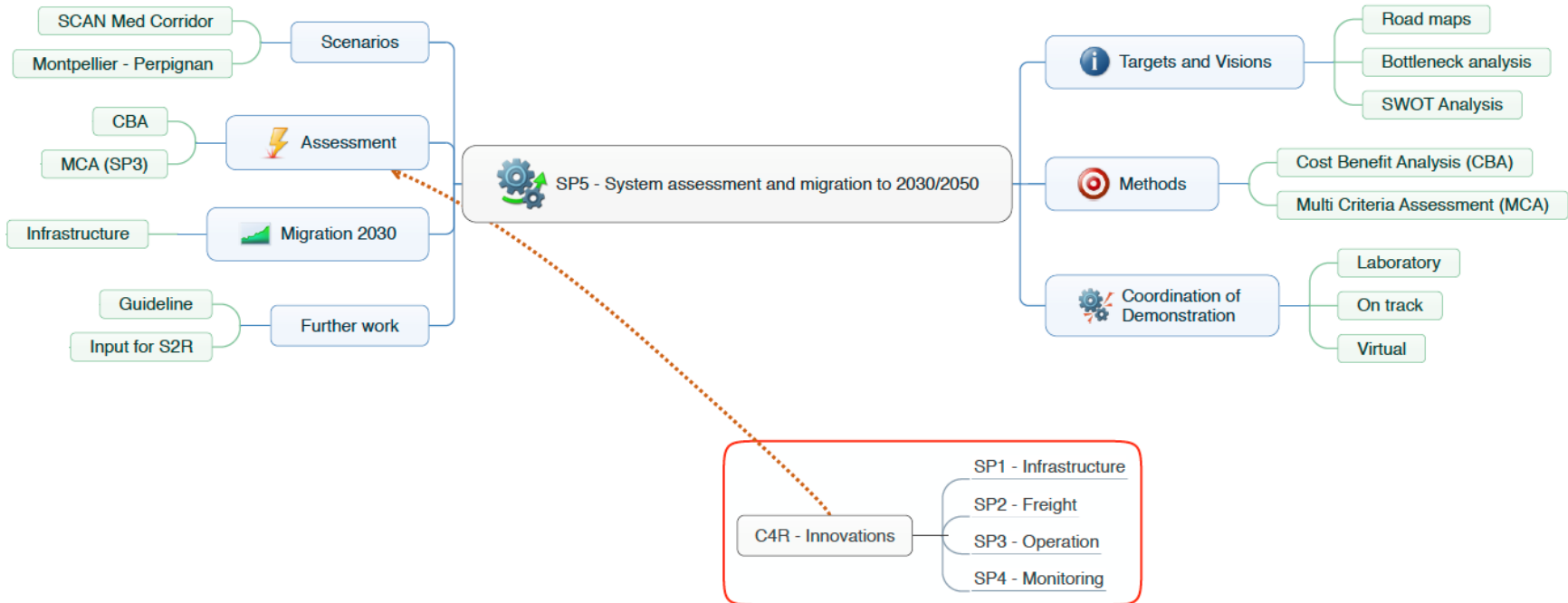
SP5 presentation will focus on

**Roadmap towards 2050** - Vijay Ramdas (TRL)

**Scenarios and assessment** - Paulo Teixeira (IST)

**Migration of infrastructure** - Burchard Ripke (DB Netz)

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