FP2
R2DATO

Demonstrator Overview

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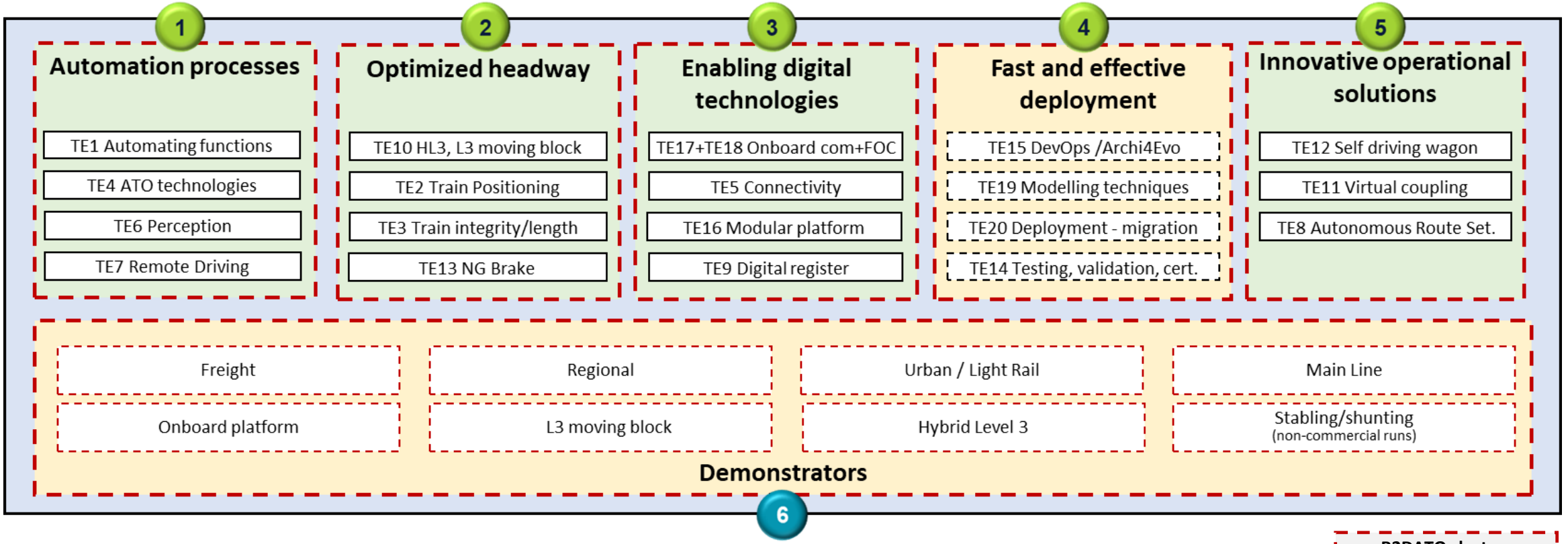
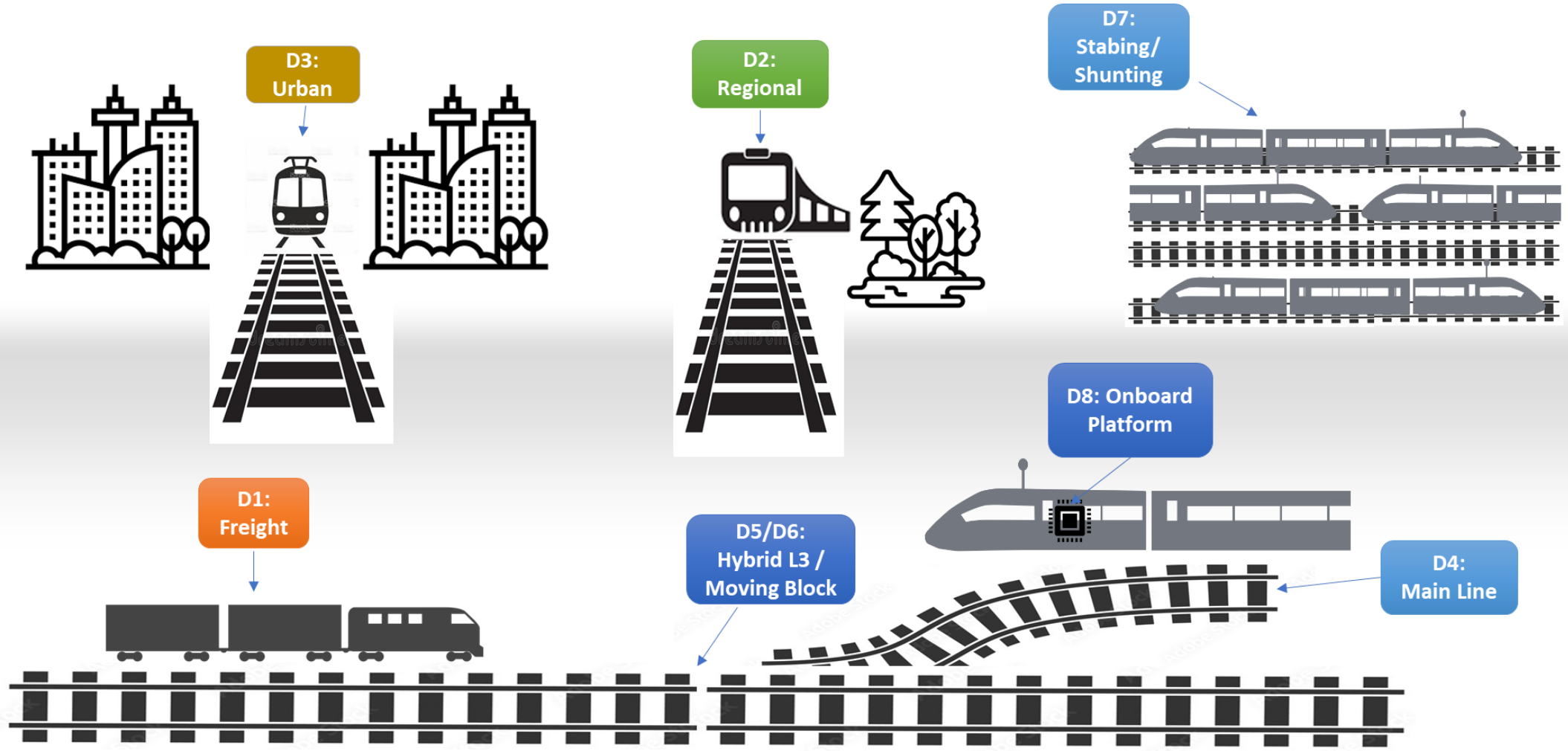
FP2 R2DATO – [Cluster] Overview



Cluster DEMONSTRATOR Overview



Demonstrator [D2 Regional]

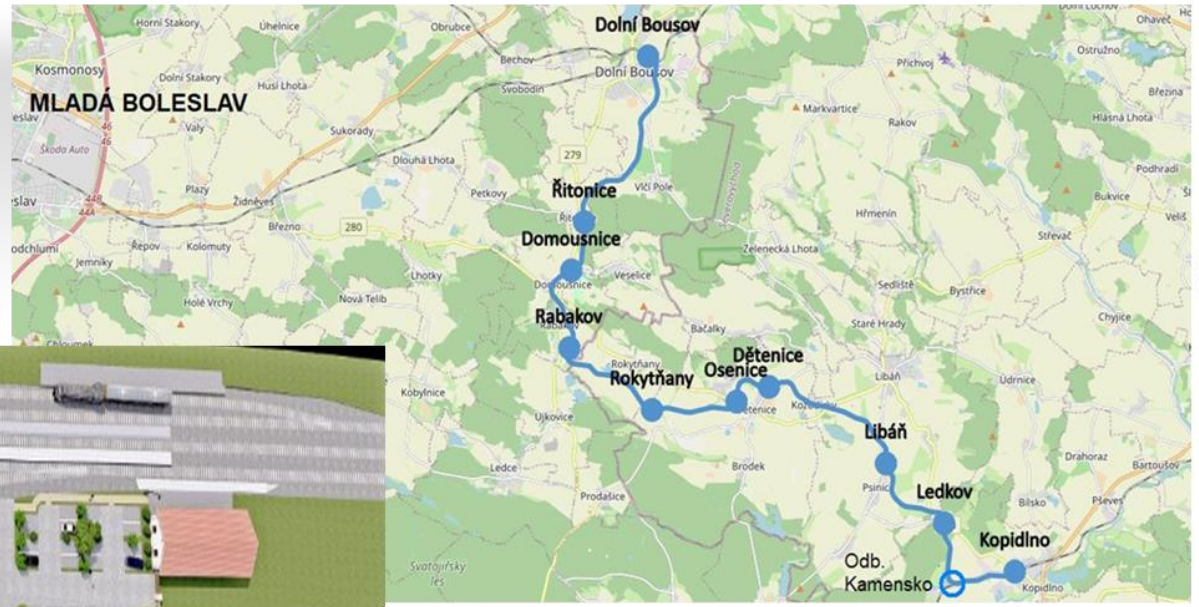
DEMO Input from

- **TE2** ASTP
- **TE4** ATO Technologies
- **TE6** Perception
- **TE7** Remote Driving

- Main objective is to support validation and testing of technical enablers developed in R2DATO in regional line environment
- Focus is on demonstration of ATO up to GoA4 functionality in full operation with onboard and trackside components, following defined architecture, use cases and requirements (from R2DATO relevant clusters)
- Major ambition is to demonstrate interchangeability of specified components like Perception, Repository, Automatic Driving Module, Positioning, etc. provided by various suppliers

Interfaces to

- **SP** Specification | Architecture | STIP
- **FP6** Specification, Operational Procedure



Demonstrator [D3 Urban]

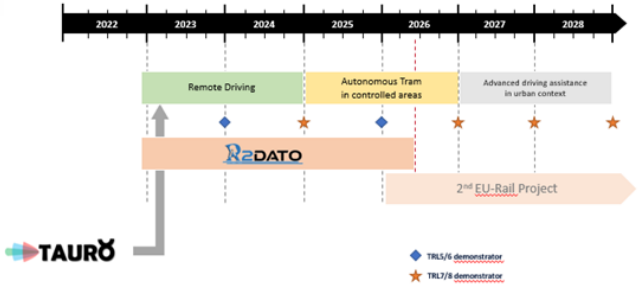
DEMO Input from

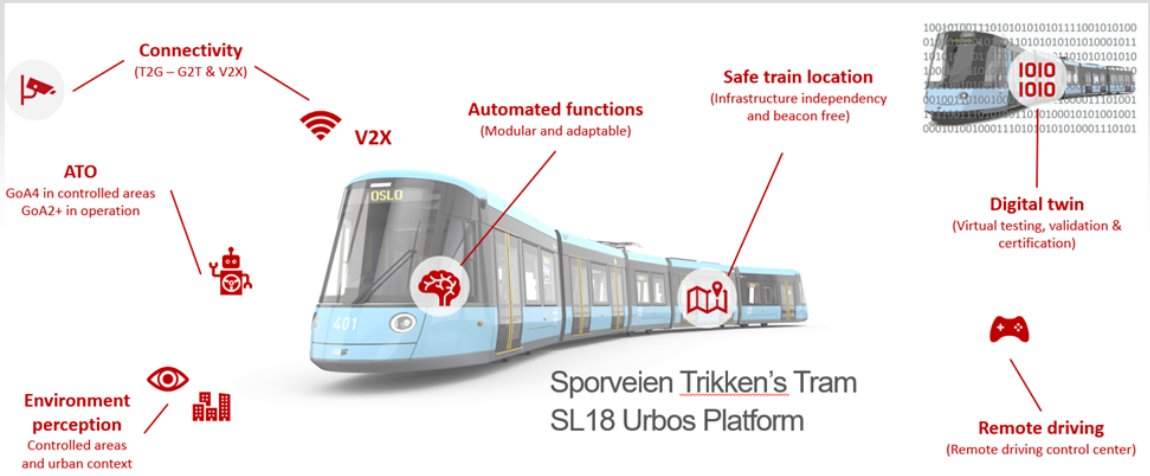
- **TE1** Automatic Functions
- **TE3** Train Integrity
- **TE4** ATO Technologies
- **TE6** Perception
- **TE6.1** Data Factory
- **TE7** Remote Driving

- make **two trams ready for demonstration** of different use cases and technologies along the project lifetime, which means to design, modify, and integrate appropriated systems which **allows development of autonomous driving functions**
- implement a **Remote Driving and Telecommand demonstrator**
- implement an **Autonomous Movements demonstrator up**

Interfaces to

No interfaces to other projects





Demonstrator [D4 MainLine]

DEMO Input from

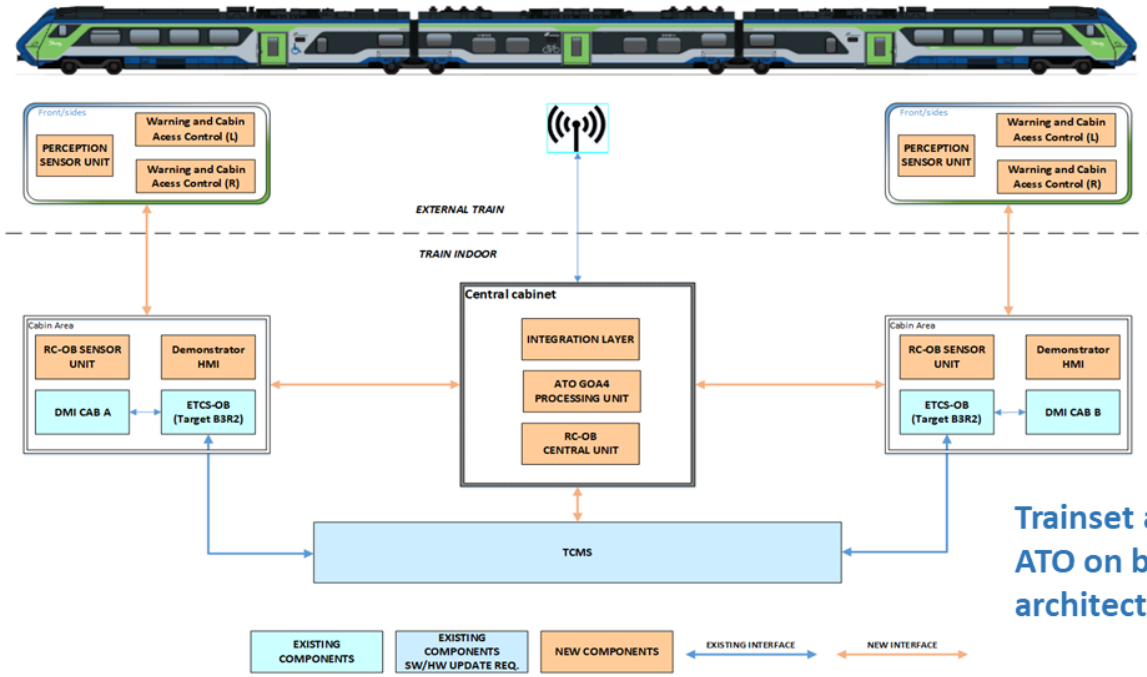
- **TE3** Train Integrity
- **TE4** ATO Technologies
- **TE5** Connectivity
- **TE6** Perception
- **TE10** HL3, L3 MVB
- **TE20** Deployment - Migration

- Prepare to demonstrate the solutions DATO over ERTMS technology can bring to relieve bottlenecks in main lines in high-density networks with heterogeneous traffic
- Showing the relevant advantages deriving from the synergy between the digital automatic train operation up to GoA 4 and the CCS evolution, increasing the capacity and punctuality of railway lines, by enabling ETCS L3 moving block with minimum infrastructure elements

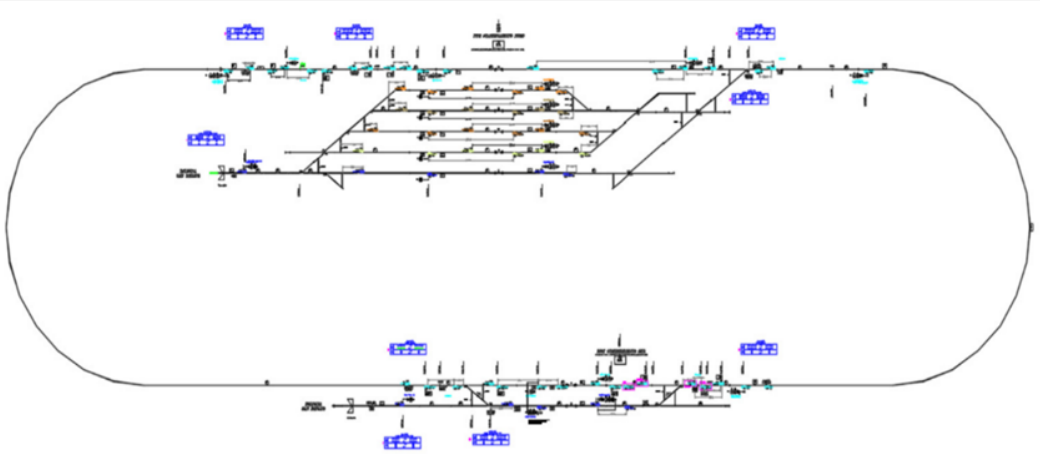
Interfaces to

SP Specification | Architecture | STIP

FA1 **FA6**



Trainset and ATO on board architecture



Demonstrator [D5 Hybrid L3]

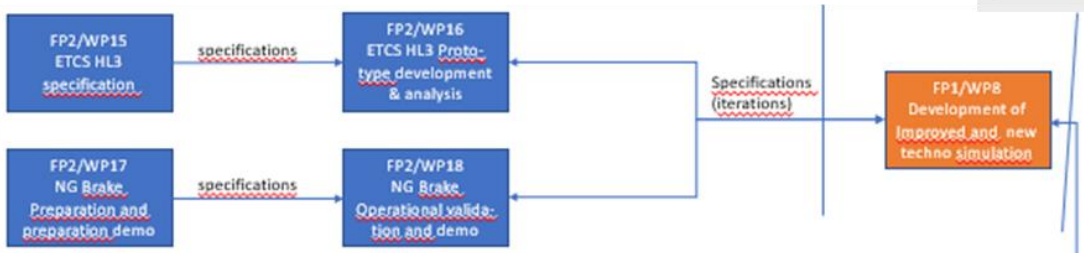
DEMO Input from

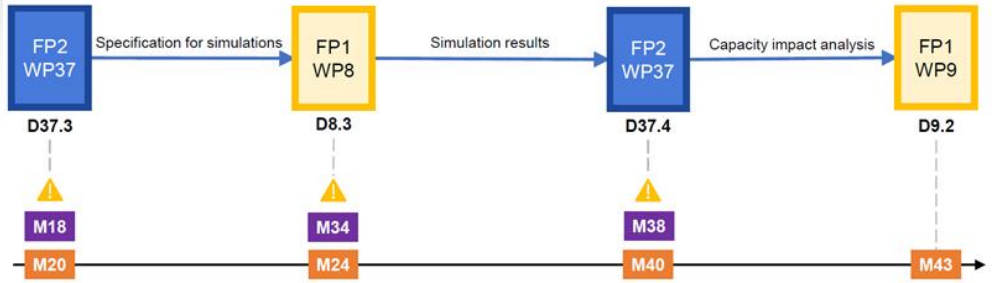
- **TE3** Train Integrity
- **TE10** HL3, L3 MVB
- **TE20** Deployment - Migration

develop **migration and deployment strategies** to accelerate the **application of ETCS Hybrid Level 3**, in order to reap the benefits as quickly as possible, thus avoiding costly investments in new infrastructure

Interfaces to

- **SP** Specification | Architecture | STIP
- **FP1** Planning & Simulation





D37.3 Requirements specification to FA1 WP8/9; **DELIVERED**
D8.3 Developed simulation methods and models for capacity evaluation of ETCS and C-DAS/ATO
D37.4 Determining ETCS HL3 capacity impact analysis using simulations; **PLANNED**
D9.2 Report: Capacity studies of optimised ETCS Level 2, Hybrid Level 3 and C-DAS/ATO

Demonstrator [D6 L3 Moving Block]

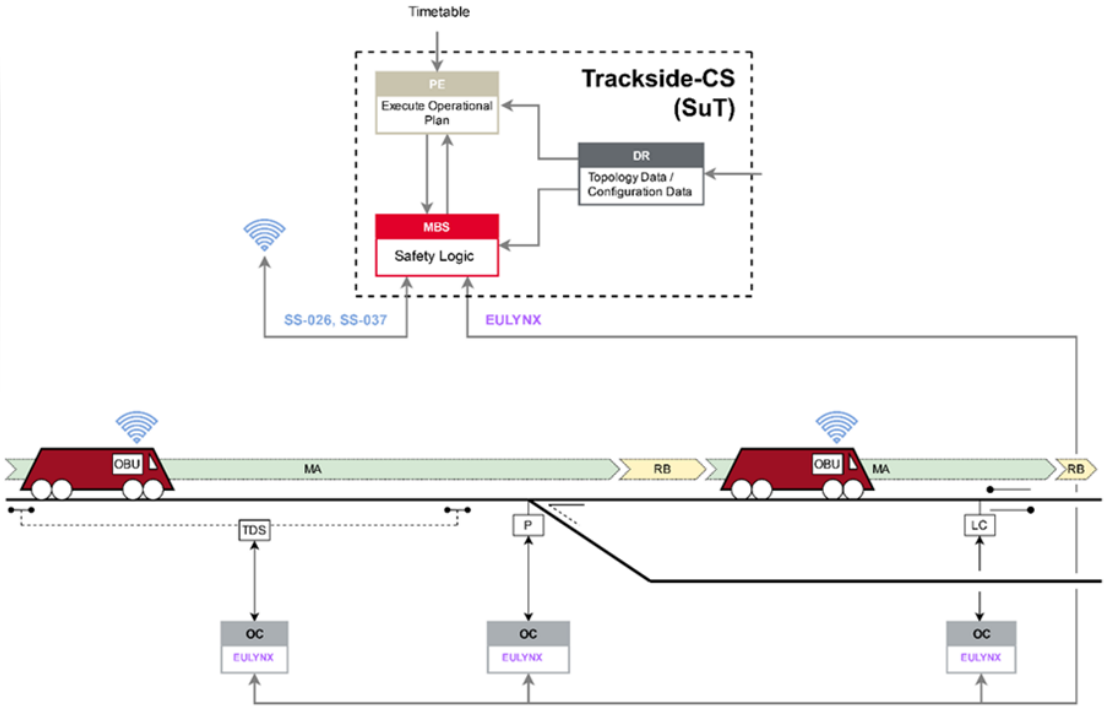
DEMO Input from

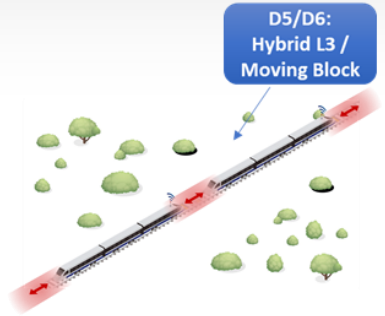
- **TE3** train integrity | length
- **TE5.1** FRMCS
- **TE9** digital register
- **TE10** HL3, L3 moving block
- **FP1** Plan Execution [PE]

- prepare the ground for a successful demonstrator: (a) identify relevant use cases/test cases to demonstrate (b) provide a demonstrator specific specification (architecture, functional requirements, interfaces)
- demonstrate a **modular train-centric** trackside protection system enabling moving block operations with **generic safety core up to TRL6** in R2DATO

Interfaces to

- **SP** Specification | Architecture | STIP
- **FP1** Plan Execution [PE]





Demonstrator [D7 Stabling | Shunting]

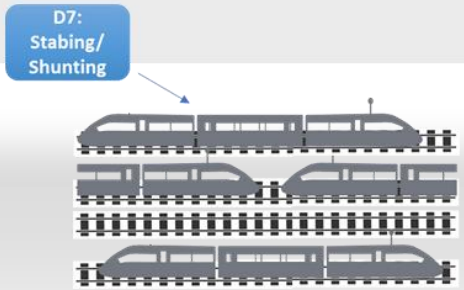
DEMO Input from

- **TE1** Automatic Functions
- **TE4** ATO Technologies
- **TE6** Perception
- **TE7** Remote Driving
- **TE13** NG Break

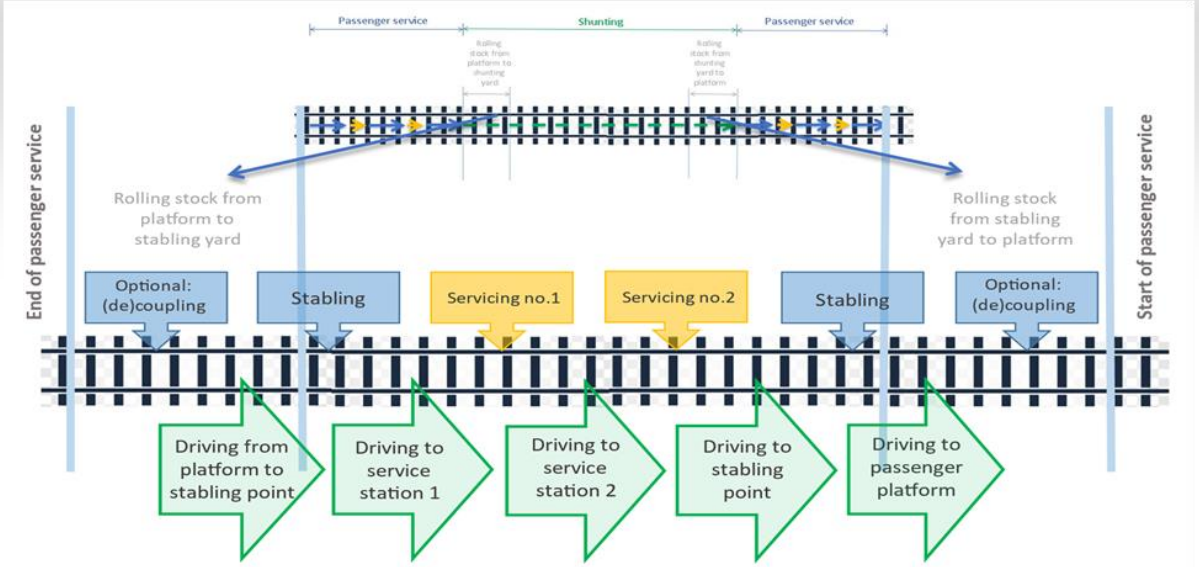
- **Testing the performance** of the technical enabler(s) incorporated in the demonstrator
- Providing feedback to the TE-developer, in order to improve the functioning of the TE, or to enhance/improve/modify the specifications
- **Performing measurements to show the improvement of the new (sub)system over the existing system**, so as to contribute to realization of KPIs defined in the call.

Interfaces to

SP Specification | Architecture | STIP



Scope Automatic Shunting project



Demonstrator [D8 Onboard Platform]

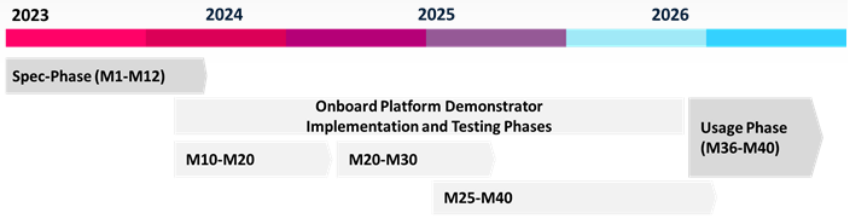
DEMO Input from

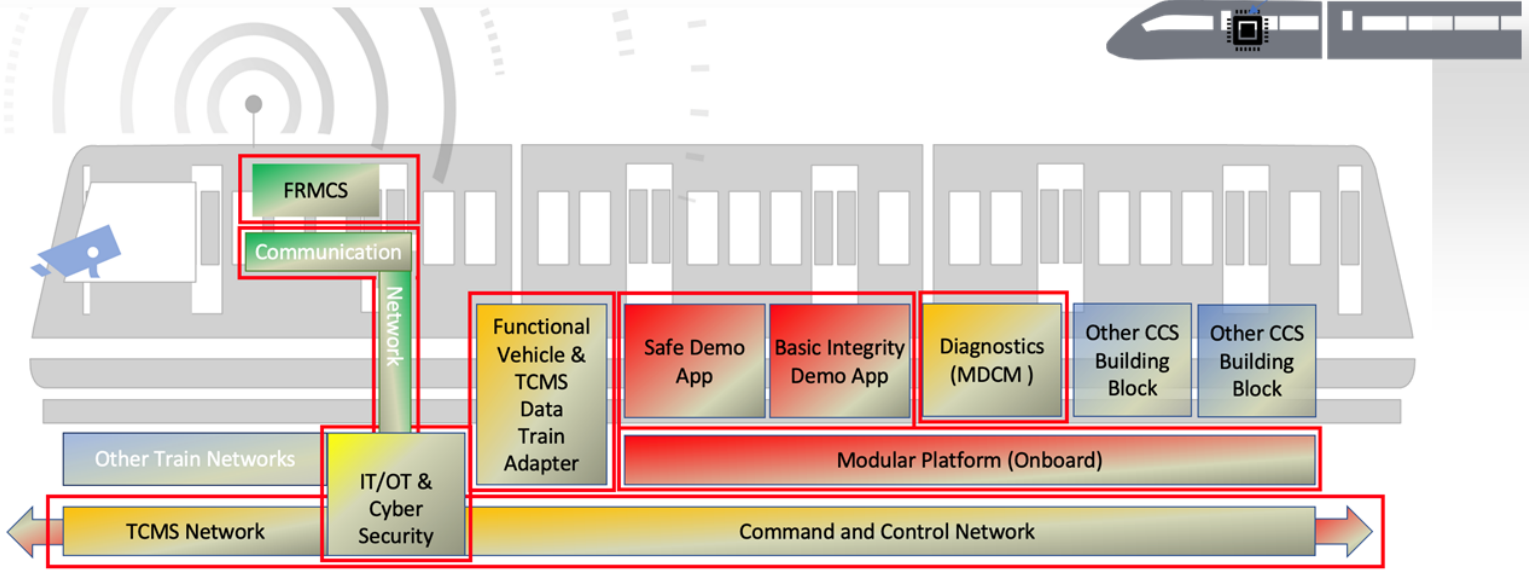
- **TE5** Connectivity
- **TE5.1** FRMCS
- **TE16** Modular platform
- **TE17** onboard COM networks
- **TE20** Deployment - Migration

- implement & validate a prototype & blueprint of the future-proof onboard connectivity & IT platforms that are required in a highly automated rail system;
- implement & validate in a **lab environment (up to TRL 5/6)** how railway application(s) can be hosted on a modular computing platform, making **use of a safe Runtime Environment (RTE), standardized Platform Independent (PI) API, onboard FRMCS functions and a unified diagnostics service API**

Interfaces to

SP Specification | Architecture | STIP





Thank you for your attention!

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