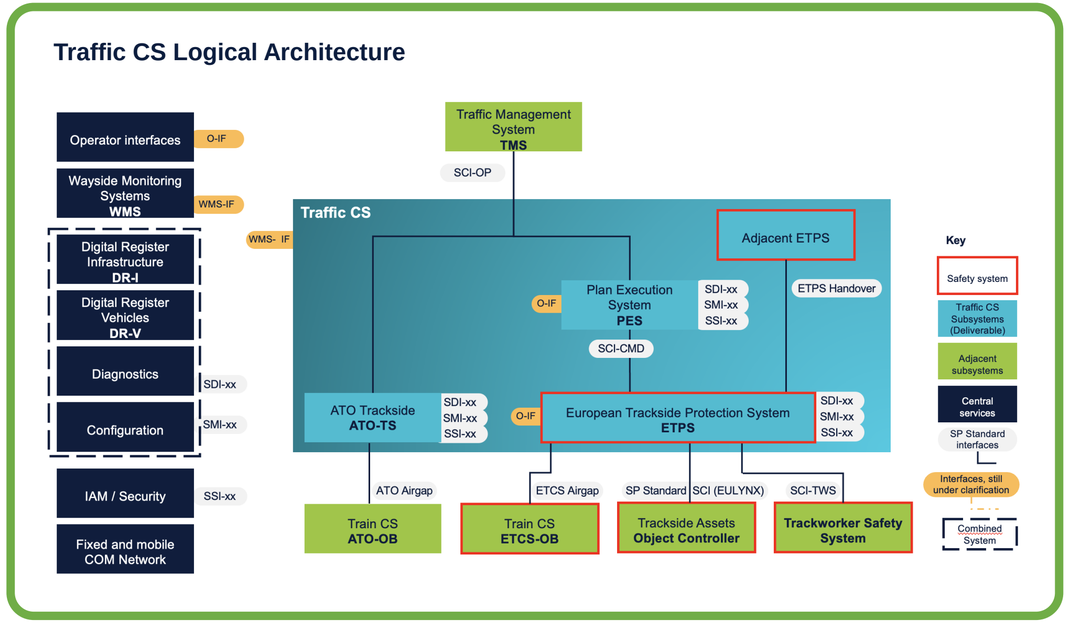
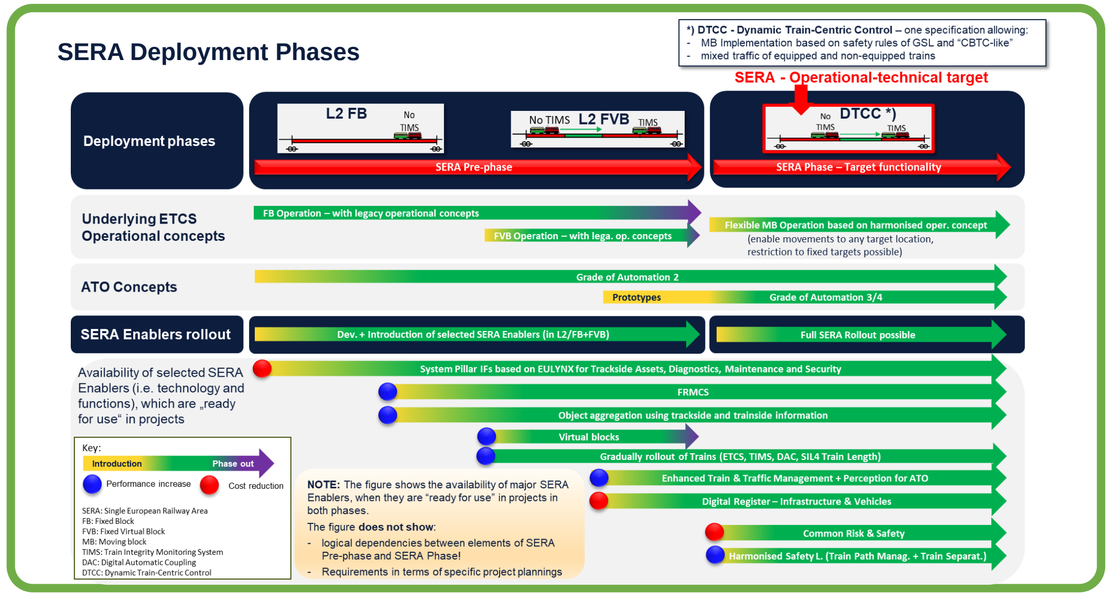
Task 2: Traffic CS

Traffic CS target functionality aims to draft specifications that allow to equip the trackside with ETCS L2 without signals on the basis of the harmonized operational concept. Optionally, ATO GoA2 and later GoA3/4 may also be included in the SERA Phase.

Traffic CS is responsible to execute the operational plan provided by the Traffic Management System (Task 3). The Traffic CS processes the operational plan and generates Movement Authorities for trains using all available trackside and onboard information (e.g. trackside train detection and train integrity) to locate trains on the track. The foreseen Moving Block implementation – called Dynamic Train-Centric Control (DTCC) - will therefore be applicable also when only parts of the vehicles are equipped with train integrity or at any level of trackside train detection density. Status and possession information of the wayside infrastructure is monitored by Traffic CS and reported to the Traffic Management System.





The Traffic CS Team will focus on developing the following new functions and technical enablers being also subject of migration towards a **"Harmonized European Rail Operation"**:

- ETCS L2 Functionality based on System Version 2.3 or higher
- CCS Architecture based on: harmonized European Trackside Protection System (ETPS; combining a cleaned-up IxL and RBC functionality specialized on ETCS L2) and Plan Execution System (PES)
- Efficient change of topology data (changed track functionality caused by construction or degraded modes) used by Traffic CS, causing smallest possible interruptions (in time and influenced area)
- Safe traffic control for any topology geometry without additional site-specific functionality or safety analysis work steps
- Safe traffic control for mixed traffic with trains with/without train integrity/train length info.
- Supervised maneuvers and harmonized ETCS shunting with signals as implementation options
- Radio communication: GSM-R and FRMCS, dual at both sides
- All other interfaces of the System Pillar Target Architecture.

The Traffic CS Team will also work on developing the following new functions and technical enablers for a "**Digital European Railway**" and an **"Automated European Railway"**:

- Digital Register incl. ASTP data
- Harmonized RTO functionality as an option
- ATO GoA 3/4

Task 2: Traffic CS

Roman Treydel *(EUG/DB Netz)* **– Railway Lead**
Udo Golebniak *(Siemens)* **– Supplier Lead**

Lead STIP Deliverables

- **STIP_019 - System Req. and interfaces ATO-TS** - 2027
- **STIP_101 - Interface to adjacent ETPS area** - 2027
- **STIP_102 - System Req. and interfaces European Trackside Protection System (ETPS)** - 2027
- **STIP_103 - System Req. Plan Execution System and interfaces** - 2027
- **STIP_104 - Interface ATO-TS to TMS** - 2027

Deliverables Request for Service (SC2.4)

- **D01 System specification and interfaces ATO-TS Function** – Q3 2025
- **D02 System specification and interfaces of the European Trackside Protection System** – Q3 2025
- **D03 System specification and interfaces of the Plan Execution System** – Q3 2025
- **D04 CCS Trackside migration analysis** – Q3 2025
- **D05 Preparation of major design decisions for management level and steering group** – Q3/2025

Latest Achievements, Challenges and Design Decisions *(to be filled periodically by the domain)*

- **Latest Achievements:** The following achievements have been accomplished by the Traffic CS domain
  - The Traffic CS System Concept as a direction for future specification work has been approved by the SYSTEM PILLAR STEERING GROUP at 13.03.2025 (N° 2/2025)
    - Confirmation to continue Traffic CS System specification in the proposed direction towards SERA
  - Release of System Concept (Link)
    - summarizes the most important system requirements for Traffic CS and explains how it is foreseen to fulfil these requirements
    - assumptions and expectations to external systems outside of Traffic CS are stated and roadmap is presented
  - Release of Major Design Decisions (Link)
    - Contains major design decisions supporting the Traffic CS System Concept
- **Domain Current Challenges:** The domain is facing the following challenges
  - Challenge #1: Delay in Operational Design and Traffic CS System Specification caused by
    - discrepancy between requested FTE, FTE commitment and actual FTE availability
    - discrepancy between required and available profiles
- **Design Decisions**: The domain has made the following design decisions that impact the Overall Model
  - Refer to System Concept (Link) and Major Design Decisions (Link)

Expected outcomes for sector review in the next 3 months

- **Subsystem specifications for ATO-TS, PES, ETPS** incl. interfaces
  - Preparation of Traffic CS System Specification package 1
    - focus on ETPS subsystem
    - Output document according to EN50126-1, phases 1-5
  - Package 1 (release mid April 25) includes an initial set of content covering following topics.
    - Movement A to B
    - Revoke Movement permission
    - Manage Usage Restrictions

    Main goal: provide an overview of the format in which Traffic CS System Specification is delivered.
- **Migration Analysis**
  - Preparation of: D1 Recommendations for current rollouts
    - Containing pros and cons, and economic assessment examples, for integration of harmonized interfaces already into the rollouts of current systems
  - Preparation of: D2_1 Functional allocation and packaging
    - Comprising comparison and assessment from migration perspective for mandatory deployment packages towards a SERA Target system
  - Preparation of: D2_2 Migration Planning Guideline
    - Containing a guideline for creating national migration plans