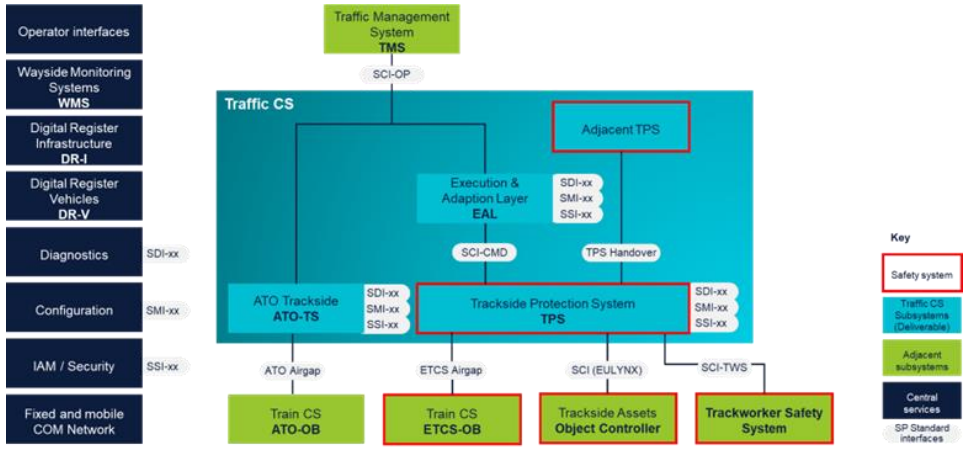
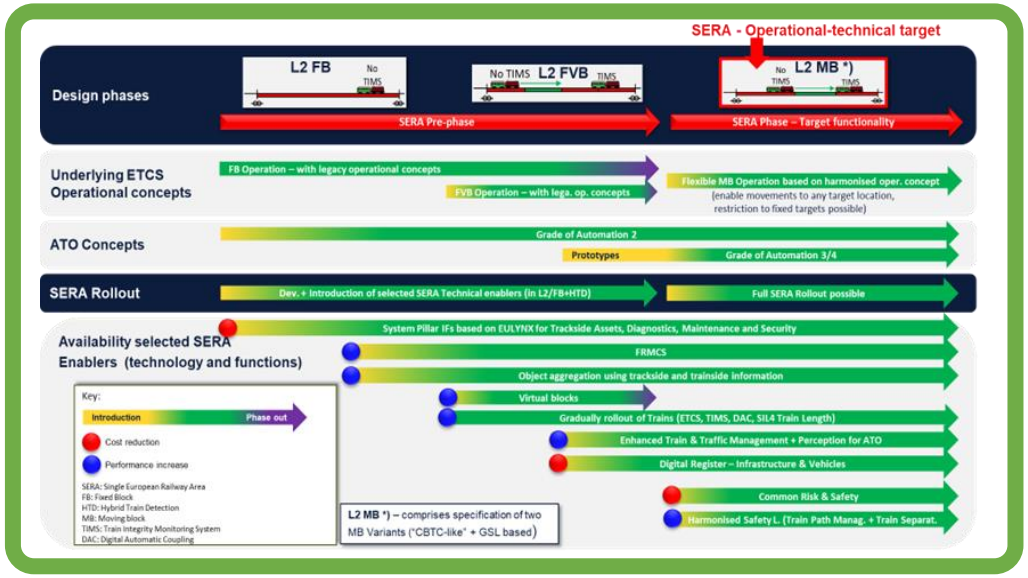
Task 2: Traffic CS

Traffic CS target functionality aims to draft specifications that allow to equip the trackside with ETCS L2/Moving Block on the basis of harmonized operation concept. Optionally, ATO GoA2 and later GoA2/4 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 an MA for MB using all available trackside and onboard information (e.g. TVD, FVB; TIMS, TL) to locate trains on the track. MB will therefore be applicable also when only parts of the vehicles are equipped with TIMS 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.

Traffic CS Logical Architecture





The Traffic CS Team will focus on developing the following new functions and technical enablers for the **"Harmonized European Rail Operation" migration plateau**:

- ETCS L2 Functionality based on System Version 2.3 or higher
- CCS Architecture based on: Harmonized Trackside Protection System (combining a cleaned-up IxL and RBC functionality specialized on ETCS L2) and Plan Execution Sys. ("PE"; EAL)
- Efficient change of topology data (changed track functionality caused by construction or degraded modes) used by the TPS causing smallest possible interruptions (in time and influenced area)
- Safe traffic management for any topology geometry w/o additional site-specific track geometry/functionality 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 signals as implem. option
- 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 focus 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

Lead STIP Deliverables

- **STIP_019 - System Req. and interfaces ATO Trackside** - 2025
- **STIP_101 - Interface to adjacent TCS area** - 2025
- **STIP_102 - System Req. and interfaces Advanced Protection System (APS)** - 2025
- **STIP_103 - System Req. Execution layer and interfaces** - 2025
- **STIP_104 - Interface ATO-TS to Execution layer** - 2025

Deliverables Request for Service (SC2.4)

D01	**System specification and interfaces ATO Trackside function** – Q3 2025
D02	**System specification and interfaces of the trackside protection system** – Q3 2025
D03	**System specification and interfaces of the execution and adaption layer** – 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:
  - Achievement #1: The integration of OD and Traffic CS domain was implemented with joint organizational setup; Factory Belt Stations approach was implemented according to Remit
  - Achievement #2: CONEMP, System Concept and FRS v0.8 updated based on feedback from review end of SC2.3

- **Domain Current challenges:** The domain is facing the following challenges:
  - Challenge #1: many new Traffic CS domain members in SC2.4 lead to high ramp-up efforts. The common understanding developed in SC2.3 must be communicated to the new joiners

- **Design Decisions**: The domain has made the following design decisions that impact the Overall Model:
  - The major design decision is a deliverable according to Remit and is currently in progress and includes a sector consultation.
  - With the System Concept Traffic CS has developed a Subsystem Architecture proposal

Expected outcomes for sector review in the next 3 months

- System Concept
  - Summarises Traffic CS “in a nutshell”
  - Contains subsystem architecture and analysis of the distribution of high-level functions to subsystems
  - Review have been undertaken in the Traffic CS domain and its mirror group
  - proposal is a mature draft, subject to further refinement during the ongoing design work

- Major Design Decision
  - Contains the status of Traffic CS design concerning its major design aspects
  - Includes and assesses concern coming from the sector
  - Shall be decided in SP STG as a basis for further detailed design

- Migration Analysis
  - Comparison and assessment from migration perspective for mandatory deployment Packages
  - CCS trackside migration integration strategy
  - Assessment of pros and cons, and economic assessment examples, for integration of harmonized interfaces already into the rollouts of current systems
  - strategic summary for management level and STG