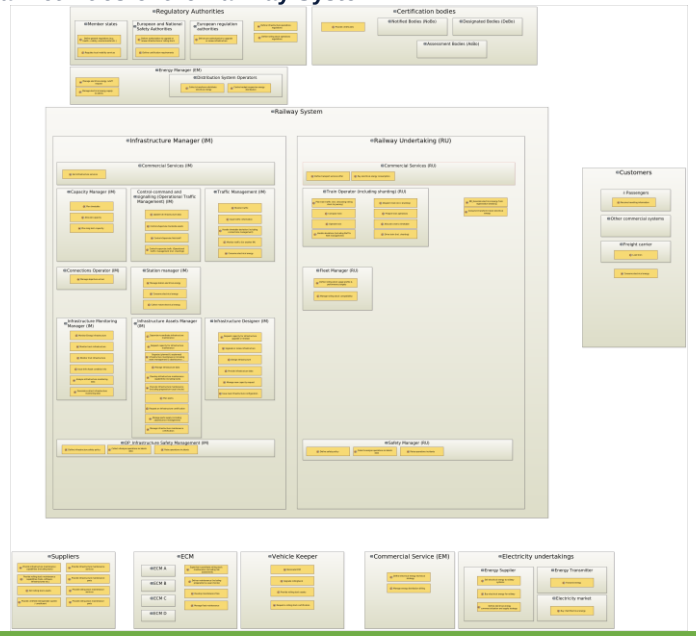
Task 1: Railway System

The Railway system is expected to deliver operational capabilities using many resources and entities. These resources interact throughout the whole life cycle, from design to operation and maintenance. Integration of new technology and new concepts or innovation is usually a complicated effort.

In the System Pillar Task 1 the Business Process Architecture and Operational Design (Organizational needs, Generic automation needs, …) for the Railway System will be specified, based on, and reflecting the Common Business Objectives and the expected future performances, up to System Level 2 Railway System Architecture. This architecture needs to be robust overtime to protect investment and enable innovation acceleration.

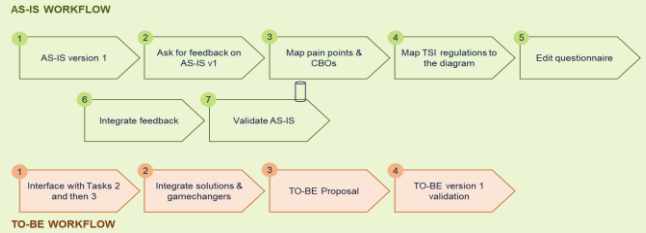
Operational Activities of the Railway System



The Task 1 Team will focus on developing the following new functions and technical enablers for the **"Harmonized European Rail Operation" migration plateau**:

- All other interfaces of the System Pillar Target Architecture, which are perhaps agreed and published at this time, can be used for optional implementations

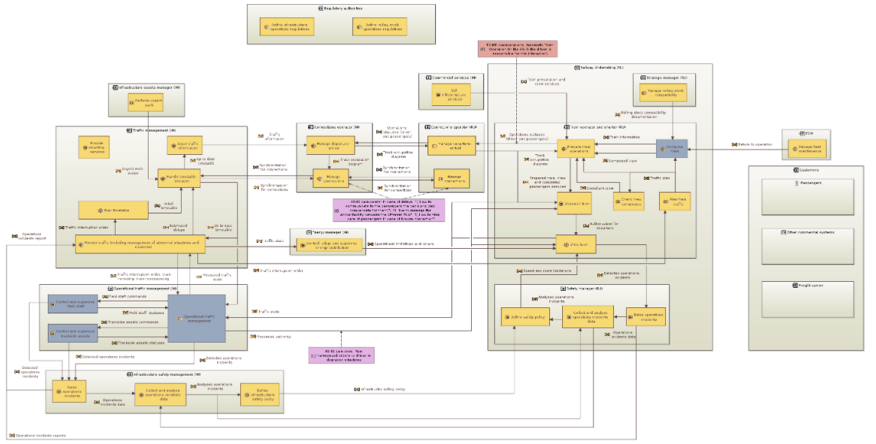
Railway System Architecture Construction of Capabilities – Roadmap



The Task 1 Team current work is dedicated to the analysis of the 5 main **Capabilities** of the **Railway System :**

- Manage Energy
- Maintain and monitor infrastructure
- Upgrade or renew infrastructure network capabilities
- Operate Train
- Maintain and Monitor rolling stock

Operate Train Capability AS-IS (as an example)



Task 1: Railway System

Lead STIP Deliverables

- *Not STIP Deliverables defined in STIP v1.*

Deliverables Request for Service (SC2.4)

D01 **TO-BE architecture of one new capability (maintain & monitor Infrastructure)** **D02**
Analysis of pain points and outputs from other SP Tasks – 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 Railway architecture domain
  - **Achievement #1:** Conclusion of To-Be architecture of «Manage Energy» and «Operate Train» capabilities. The deliverables are approved within the SP Task1 Members and Core Group.
  - **Achievement #2:** The Interfaces and communications with other SP tasks and IP FPs already started (Operate Train and Manage Energy Capabilities)
- **Domain Current challenges:** The domain is facing the following challenges:
  - **Challenge #1:** Common View of All European Stakeholders on the described capabilities
  - **Challenge #2:** Interfaces with other tasks.
- **Design Decisions:** The domain has made the following design decisions that impact the Overall Model:
  - **Decision:** N/A at this stage.

Expected outcomes for sector review in the next 3 months

Closeout Phase 2.3

- The new Mirror Group will be set-up for the feedback of S.C 2.3 deliverables;
  - Operate Train To-Be Architecture
  - Manage Energy To-Be Architecture
  - Infrastructure AS-IS Architecture
  - Maintain & Monitor Rolling Stock AS-IS Architecture