DECISION OF THE SYSTEM PILLAR STEERING GROUP

Adopting the conclusion on the standardisation potential for

Interfaces to Field Devices and

Power Supply & Power Management of Trackside Asset Subsystems

N° 1/2025

THE SYSTEM PILLAR STEERING GROUP OF THE EUROPE'S RAIL JOINT UNDERTAKING, NOTES

- **Context & Scope**
  - The current trackside infrastructure consists of diverse field devices (point machines, light signals, train detection systems, level crossings, and generic I/O devices), developed over time in a brownfield environment with supplier-specific control interfaces.
  - The goal of the analysis was to assess the potential for further standardisation to improve interoperability, reduce costs, and enhance sustainability.
  - The reports investigated both control interfaces for field devices and power supply and power management functions to determine feasibility and benefits of harmonisation.
  - The reports have been prepared and approved by the Trackside Assets CS Domain, and are approved on Coregroup level.

- **Summary of Findings**

  - **Interfaces to Field Devices:**
    - Point Machine Interface: Two standardisation variants (mixed and separate drive/detection) were considered, but harmonisation benefits remain inconclusive due to existing national standards and migration concerns, and business improvements are not confirmed.
    - Wheel Sensor Interface: Standardisation confirmed as not feasible due to supplier-specific technological differences.
    - Other Interfaces (I/O, Light Signals, Level Crossing): harmonisation benefits are low, any harmonisation activity should be proven first on the point machine interface.

  - **Power Supply & Power Management:**
    - Power Supply Interface: High variability of the existing situation across Infrastructure Managers, no clear candidate for harmonisation, and very limited economic benefit.

- Power Management Functions: Some potential for energy savings through sleep or hibernate modes, but operational risks, reliability concerns, and development costs outweigh benefits.

THE SYSTEM PILLAR STEERING GROUP OF THE EUROPE'S RAIL JOINT UNDERTAKING, AGREES

- On following conclusions:
    - **Interfaces to field devices**: While there is some potential for standardisation, particularly for the point machine interface, existing national standards and low stakeholder interest do not justify further harmonisation.
    - **Power Supply**: Due to the high variability in power supply standards and lack of economic benefits, further standardisation efforts will not be pursued.
    - **Power Management**: Although power savings are technically possible, these are offset by significant disadvantages. No further work will be conducted in this area.
    - Given the inconclusive benefits of standardisation and the absence of strong stakeholder demand, further economic analysis has not been recommended.
- The System Pillar formally concludes this assessment and will not pursue additional standardisation related to trackside field devices and power supplies unless sector-wide interest or economic benefits justify reopening the discussions.

ANNEX

- See associated documents
    - SP TACS Analysis of Standardisation Potential for Interfaces to Field Devices
    - SP TACS Analysis of Power Supply and Power Management of Trackside Assets