DECISION OF THE SYSTEM PILLAR STEERING GROUP

on-board modularity mature solution proposal

N° 2/2026

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

- The mature solution proposals presented correspond to the Change Request (CR) problem descriptions on onboard modularity referenced in System Pillar Steering Group Decision No. 09/2025, *Supporting the submission of the CR problem descriptions and preliminary solution approaches to the ERA CCM database,* namely

    - SP CR 26918 – Elimination of MVB and CAN from the Subsets
    - SP CR 27490 – FFFIS update for Subset 027
    - SP CR 26831 – Update of Subset 147 to limit the middle layer to TRDP as the Ethernet technology for process data
    - SP CR 26860 – Introduction of new communication types (e.g. bulk and event based communication) in addition to process data communication
    - SP CR 26889 – Adaptation of Application Layer Subsets to an XML based description of communication packets
    - SP CR 26947 – Consistency of Subset 147 specification with FRMCS v3 workstream

- The primary objective of registering these solution proposals in the ERA CCM database is to enable the initiation of the ERA CCM process which is planned to start for these CR on the second half of 2026 and allow the relevant ERA working groups to address the associated CRs

- Individual CRs solutions have been prepared by the System Pillar (SP) domains and/or the Innovation Pillar (IP), based on the outcomes of EU-Rail activities. Each CR solution has undergone review and approval through the SP governance process, including contributions and feedback from the mirror groups. The aim is to provide mature and high-quality material.

- For the on-board modularity solution proposals, the general impact expected is as follows
    - Harmonisation for modularity: Today, several layers of the CCS onboard bus are proprietary or include optional variants, limiting exchangeability, increasing lifecycle complexity and costs, and hindering the integration of new functions. The proposed CRs solutions close these gaps by progressing towards a single, standardised solution for all subset 147 layers.
    - Today, the serial MVB (Multifunction Vehicle Bus) and CAN (Controller Area

Network) are only not allowed in case of new vehicle types requiring first authorisation. Their complete removal for new CCS products shall be introduced.
  - Avoidance of duplicated services and antennas: TTLS (Train Time and Location Service) is currently required in multiple modules (e.g. FRMCS and Subset 147). In Subset-147 it is defined as a service with no specific location in the Train CS architecture. Harmonisation is needed to prevent duplication and supports the proposal to introduce a new interoperability constituent (IC) with the intention to group it with other ICs.

- The current status of the domain and mirror group reviews of the CRs solutions can be summarised as follows:
  - CRs reviewed and approved:
    - SP CR 26918 – Elimination of MVB and CAN from the Subsets
    - SP CR 27490 – FFFIS update for Subset 027
  - CRs which are in progress with a positive outlook but which require further improvements prior to submission to the ERA database:
    - SP CR 26831 – Update of Subset 147 to limit the middle layer to TRDP as the Ethernet technology for process data
    - SP CR 26860 – Introduction of new communication types (e.g. bulk and event-based communication) in addition to process data communication
    - SP CR 26889 – Adaptation of Application Layer Subsets to an XML based description of communication packets
  - CR which are in progress but not approved by all stakeholders:
    - SP CR 26947 – Consistency of Subset 147 specification with FRMCS v3 workstream

- Taking into account the positive impact on the sector and the current status of the TSI text, the following considerations apply regarding the need for further economic analysis:
  - CRs not requiring additional economic justification, as agreed in the sector and with ERA and they close open points necessary to achieve actionable onboard modularity under Commission Implementing Regulation (EU) 2023/1695 of 10 August 2023:
    - SP CR 26918 – Elimination of MVB and CAN from the Subsets
    - SP CR 27490 – FFFIS update for Subset 027
    - SP CR 26831 – Update of Subset 147 to limit the middle layer to TRDP as Ethernet technology for process data
    - SP CR 26860 – Introduction of new communication types (e.g. bulk and event-based communication) in addition to process data communication
  - CRs requiring additional economic justification, currently under preparation and to be presented at the next Steering Group meeting:
    - SP CR 26889 – Adaptation of Application Layer Subsets to an XML based description of communication packets
    - SP CR 26947 – Consistency of Subset 147 specification with FRMCS v3 workstream

- The transition regimes proposed for all CR included in this decision for the on-board modularity are set to the standard C2 transition regime of 7 years. Therefore, it is agreed

also with ERA that for these CR no economic assessment as regards the transition consideration is necessary for the standard transition regime.

- The following table contains a summary of the considerations per CR as described in the previous paragraphs:

CR Id	Title	Sector review	Additional work is necessary	Additional transition considerations necessary	Economic analysis support necessary
SP CR 26918	Elimination of MVB and CAN from the Subsets	positive	No	No	No
SP CR 27490	FFFIS update for Subset 027	positive	No	No	No
SP CR 26831	Update of Subset 147 to limit the middle layer to TRDP as Ethernet technology for process data	positive but preliminary	Yes	No	No
SP CR 26860	Introduction of new communication types in addition to process data communication	positive but preliminary	Yes	No	No
SP CR 26889	Adaptation of Application Layer Subsets to an XML based description of communication packets	positive but preliminary	Yes	No	Yes
SP CR 26947	Consistency of Subset 147 specification with FRMCS v3 workstream	To be finalised	Yes	No	Yes

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

- The ARC CR Coordination Team shall submit to the ERA CCM database the solution proposals for the CRs that have been agreed, approved, and do not require additional economic justification:

    - SP-CR-26918 – Elimination of MVB and CAN from the Subsets
    - SP-CR-27490 – FFFIS update for Subset-027

- The Train CS domain and the ARC CR Coordination Team shall continue the following three CRs, maintaining the solutions already agreed by the domain and mirror groups. The finalised versions shall be confirmed at the next SP Steering Group meeting:

    - SP-CR-26831 – Update of Subset-147 to limit the middle layer to TRDP as Ethernet

technology for process data
  - SP-CR-26860 – Introduction of new communication types (e.g. bulk and event-based communication) in addition to process data communication
  - SP-CR-26889 – Adaptation of Application Layer Subsets to an XML-based description of communication packets

- Economic justification shall be provided at the next SP Steering Group meeting for the following CRs:

  - SP-CR-26889 – Adaptation of Application Layer Subsets to an XML-based description of communication packets

- Technical rework on the solution proposal is necessary with the mirror groups. Economic justification and the reworked solution proposal shall be provided at the next SP steering group for the following CR:
  - SP-CR-26947 – Consistency of Subset-147 specification with FRMCS v3 workstream

ANNEX A: Solution proposals for onboard modularity CR