

## **DECISION OF THE SYSTEM PILLAR STEERING GROUP**

### **adopting the approach for the FRMCS V2 specifications**

**N° 1/2023**

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

- The update and development of the future radio system for rail is a critical and central element to the digitalisation of the future rail system.
- The obsolescence of the GSM-R system places a significant time pressure on the development of the future system.
- UIC is leading the specification stream and the corresponding process of standardisation within 3GPP and ETSI for the future radio specifications – the UIC FRMCS Programme.
- The FRMCS V1 Specification set of documents are proposed for inclusion in the CCS TSI update to be voted by Member States in the first half of 2023.
- Following this, the V2 of the FRMCS specifications is to be finalised to allow testing and validation of the V3 of the FRMCS specifications, considered as the first implementable version of the specifications in association with the relevant ETSI standards under development.
- Rail infrastructure managers wish to take the most benefit of the technologies in the telecom domain, including the services provided by the market. Hence, some have interest in using public mobile network operators (MNOs), subject to interoperability requirements.
- In terms of introduction into the TSIs, the V2 and V3 of FRMCS specifications are to be delivered according to agreed timelines for EECT Radio validation, to allow timely input into an ERA Technical Opinion/TSIs. In parallel, ETSI FRMCS standards, referring for an important part to 3GPP standards, need to be ready to be considered and referenced in the FRMCS specifications at both stages.
- The completion of FRMCS V3 and inclusion within the TSI is then considered as the final target for the notification mechanism, i.e. allowing Railway Undertakings to tender on-board-FRMCS after receiving a notification of GSM-R end of life from an Infrastructure Manager. It is then critical that V3 is mature enough to allow procurement, and therefore the V2 is a key milestone, setting the scope for V3.

- The scope of Version 2 of the specifications has recently been set within the UIC FRMCS Program and communicated to ERA and UNITEL for review.
- The System Pillar has the mission to establish the overall vision for the future development of the railway system. It has a fundamental role in ensuring the coherence of the work of individual work streams with the overall vision – and thus in ensuring the compatibility of inputs to the TSI process with the target system.

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

- There should be a full consideration of the Version 2 specifications, and the delivery and planning of the broader FRMCS programme by
  - the sector as a whole,
  - ERA as the ERTMS System authority
  - EC (DG MOVE), including as its role to consider the scope of the FRMCS V2 specification in line with its role according to Article 5 of the Interoperability Directive.
- The System Pillar in its role to establish an overall vision for the future development of the railway system will coordinate and manage a Standardisation and TSI input plan, including interfacing with Change Control Management process of ERA for the CCS TSI to ensure consistency with the overall CCS development, operational concept, and architecture.
- The V2 FRMCS specifications, and their input to the TSI and European standardisation processes are then to be considered in the Standardisation and TSI input plan.
- It is therefore proposed that the FRMCS V2 specifications should be considered by the System Pillar, including at the level of the System Pillar Steering Group.
- The process to achieve this is as follows:
  - The draft ERA Change Request pre-assessment template is to be completed by SP Task 2 Communication Domain<sup>1</sup> in alignment with UIC FRMCS Program
  - The draft template for the Standardisation and TSI input plan to be completed by SP Task 2 Communication Domain<sup>2</sup> in alignment with UIC FRMCS Program
  - Additional reports may be provided by SP Task 2 Communication Domain and/or resource under System Pillar Lot 3, in alignment with UIC FRMCS Program, outlining additional information where not covered by the documents above.

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<sup>1</sup> To note that this is currently a draft ahead of broader discussion with the sector, but can be used for the current process

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- Overall the collected reports should include:
  - a description of the content of the V2 specifications and the rationale of the overall strategic orientations
  - consideration of the completeness of the technical documents proposed
  - the harmonisation channels considered (TSI, European standardisation, other)
  - the analysis of specific issues, as, at the minimum
    - the strategy on how to include MNOs in V2 as alternative and/or redundant bearer, and their inclusion in the proposed testing and validation campaign.
    - FRMCS as a multi-bearer communication system including dedicated RMR bands and public MNO bands
    - the consideration of FRMCS within Innovation Pillar projects, particularly regarding R2DATO
    - the consideration of compatibility (or possible association) with FRMCS of S2R projects and results such as the Adaptable Communication System
    - the properties of modularity of the architecture design permitting future proofing, for the use of upcoming technologies, such as satellites or others
  - complete list of planning and deliverables to support UIC V2 specifications for EECT purposes and for example:
    - mapping of the functional requirements to the system requirements
    - planning and output of spectrum studies
    - cybersecurity risk assessment
  - derivation of a robust project timeline, including the timing of delivery of the specifications and standardisation inputs and the link to tendering and deployment, and identified risks and mitigants to timely delivery so that vehicle owners and infrastructure managers can start planning the implementation of FRMCS in order to ensure that the migration is complete before GSM-R is end of life.
  - the consideration of the access to the specifications.
- These documents will be assessed by
  - DG MOVE (Unit C4)
  - ERA (ERTMS team, and CR preassessment team)
  - EU-Rail (System Pillar unit)
- As part of the assessment further information may be requested, and/or specific workshops set up to assess the information. Additional parties may be consulted, for example to Task 2 Architecture coordination domain regarding the consistency and alignment with the wider CCS architecture.
- Following the assessment process, which may include certain questions and corresponding answers, the documents may be updated, and the 3 sets of documents will then be submitted to the System Pillar Steering Group. It is targeted that the documents will be submitted to the System Pillar Steering Group of May 31, 2023.
- Once accepted by the System Pillar Steering Group the relevant elements of the UIC FRMCS v2 specifications would be formally listed as an element of the Standardisation and TSI input plan.
- It is understood that, beyond the work described above, there is a need, for the right technical alignment of the FRMCS specifications for instance with ETCS and ATO, and

the contribution to the EECT process, and that System Pillar resource will be considered as a means to support this (within available budget constraints).

- It is understood that there will be an amendment to the MoU between ERJU and UIC for the access to specification documents as well as more generally speaking for a collaboration in aligning the activities. This agreement is currently under construction.