



FP2-MORANE 

Flagship project 2

Mobile radio for Railway Networks in Europe 2

The project is supported by the Europe's Rail and SNS Joint Undertakings and its members



PROJECT SCOPE

The expected obsolescence of GSM-R, together with the need to enable digitalisation in train operations has led the European railways, together with the sector to set a global plan for the definition of a new radio system, which is the 3GPP 5G MCX Future Railway Mobile Communication System (FRMCS).

As a historical reference to Morane (the project that created GSM-R in Europe 25 years ago), **MORANE-2** is the full testing of the FRMCS V2 set of specifications, which will be confirmed through labs and field testing of the whole FRMCS ecosystem, leading to a solid FRMCS V3 set of specifications.

The project focuses on:

- Firstly, developing the definition of a complete set of Test Cases, and of a set of Test Plans per (each) Lab or Field, activity which is led by UIC.
- The second step of the testing activities will be achieved in 3 different labs – run by Ericsson, Nokia and Kontron.
- The final step is five different field tests – operated on two railway tracks from ADIF, one from DB, one from TRAFIKVERKET and one from PRORAIL. Four of these lines are conventional, the fifth, in the ADIF network, being a high-speed line.

PROJECT OBJECTIVES AND AMBITION

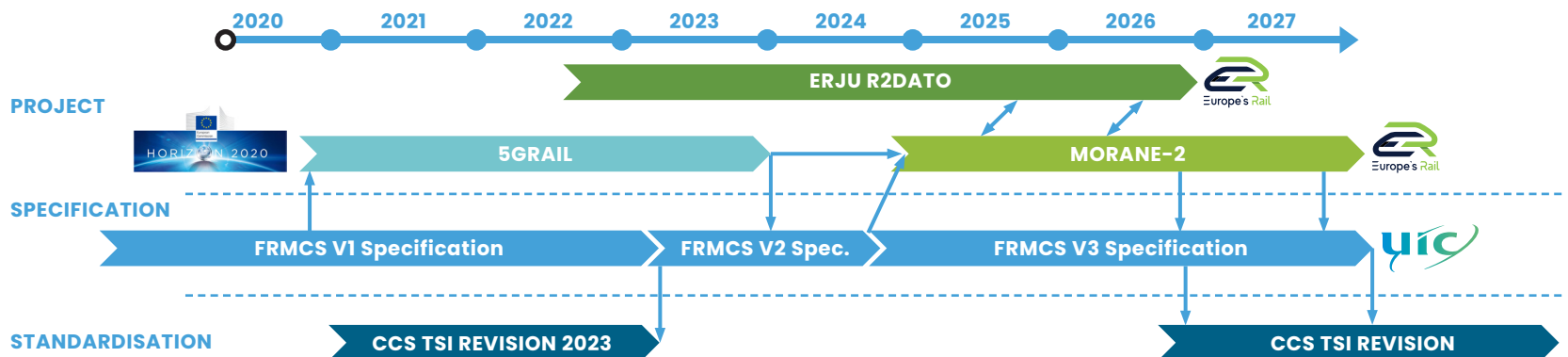
The main purpose of this project is to validate the FRMCS V2 Specifications, with precommercial FRMCS system components of multiple vendors in realistic operational conditions.

The objectives and ambition of the FP2-MORANE-2 project include:

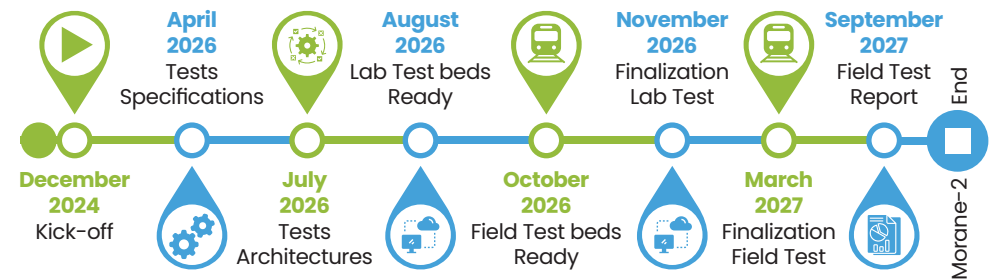
1. Confirm the future proof FRMCS architecture with the necessary telecommunication elements, based on UIC Specifications
2. Testing the necessary functions of the FRMCS V2 set of specifications
3. Validating and returning on experience – this includes confirming / correcting / amending FRMCS V2 specifications, and communicating these elements to the UIC FRMCS Program for the closing of the FRMCS V3 set of test activities.

The general aim is also to create a highly mature product ecosystem for FRMCS. This is an ambitious goal only made possible by the progress of the FRMCS specification stream, which is also related to breakthroughs from the Horizon 5G-RAIL project at the end of 2023.

PROJECT TIMELINE



ROADMAP



IMPACT

The general impact expected from the project is the validation of the first market-ready version of the UIC FRMCS set of specifications, which will be part of the regulation with its foreseen inclusion in the European CCS Technical Standards for Interoperability.

The emergence of a multi-vendor ecosystem of FRMCS solutions, will lead to a future innovative and competitive market for the various FRMCS range of products.

One critical impact of this project is to enable the migration of GSM-R to FRMCS in Europe, and also worldwide.

The 5G MCX FRMCS will ensure train modernisation and enabling digitalisation of the railway operations.

These are very important – using the RMR and MNO bands – strategic objectives for the railway sector in Europe. The technology will ensure an improvement in capacity and reliability of rail services, on top of boosting safety.

MORANE-2 IN A NUTSHELL

FRMCS (1st Edition) Demonstrator (Europe)

13.5M €
Total project budget

20
Partners

34
Months Duration

12/24 ——— **09/27**
Start Date End Date

PROJECT MEMBERS

COORDINATOR



PARTNERS



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