# Future Railway Mobile Communication System

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# UIC Future Railways Mobile Communications Systems Project

**UIC FRMCS Project was formally initiated by UIC in 2014, after 4 years of previous activities in this field.**

**Three main work directions to provide the baseline platform for the system definition and delivery:**

- User Requirements
- System architecture, interfacing with track side and onboard equipment
- Frequency Spectrum

**Provide an appropriate replacement to EIRENE FRS:**

-Based on User Requirements

-Investigate current usage of GSM-R; delete functionalities if unused

-Investigate future needs and add potential new functionalities

## Project Scope:

**Provide overall technical conditions for the successor of GSM-R**

**Investigate and perform studies for further improvement or opportunities related to:**

- Sharing infrastructure, spectrum or other resources
- Usage of commercial non-specific user applications and equipment;
- Application layer.

**Migration Strategy:**

- Migration spectrum needs
- Network model
- Technical conditions for interoperability – interoperability with GSM-R
- Flexible FRMCS implementation plans

# FRMCS project organisation

## Steering Committee (reporting to UIC HQ and ERIG), 3 WGs.

**WG Functionalities**

- **Functionalities:**
- User Requirements
- Use Cases
- Traffic Analysis
- Support ETSI SR Doc
- Use Cases for 3GPP SA1
- FRS first draft

**WG Architecture & Technology**

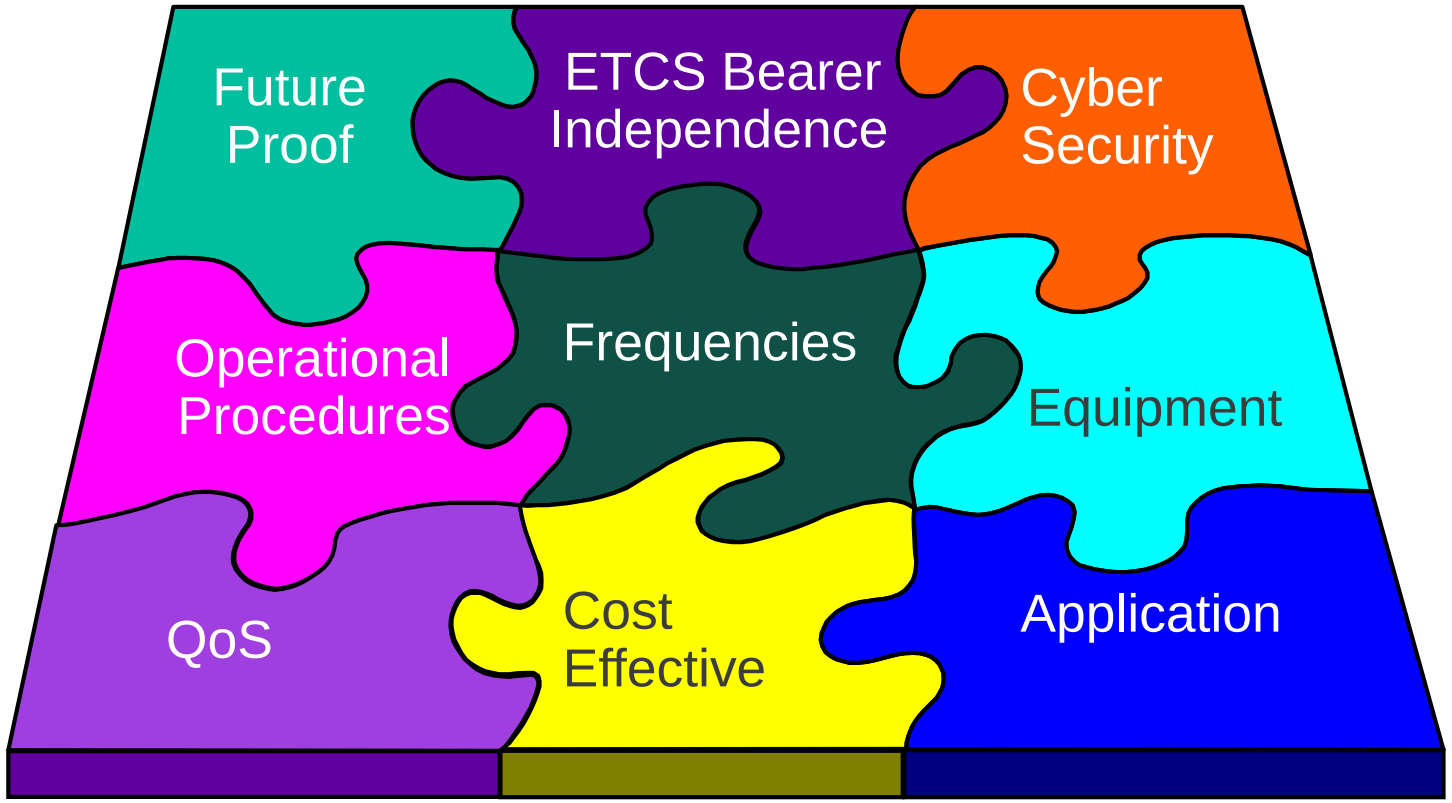
- **Architecture and Technology:**
- Technology survey
- On board and Track Side Architecture
- Security
- Use Cases for 3GPP SA1
- Support ETSI SR Doc

**UIC Group for Frequency Aspects (UGFA)**

- **Spectrum:**
- Spectrum analysis, needs, strategy
- Interface ECC / WG FM,
- Traffic Analysis
- Support for ETSI SR Doc

**Interfaced with the UIC Platforms and Forums, ERIG, ERA, ETSI TC RT, 3GPP, stakeholders and partners.**

# FRMCS Challenges



# Future Railways Mobile Communications Systems

## Ongoing UIC FRMCS Activities:

- Maintain Users Requirements Specification (URS)
- Deliver Use Cases to 3GPP SA1 through ETSI TC-RT for R15/16, ensure permanent contact with 3GPP through TC RT

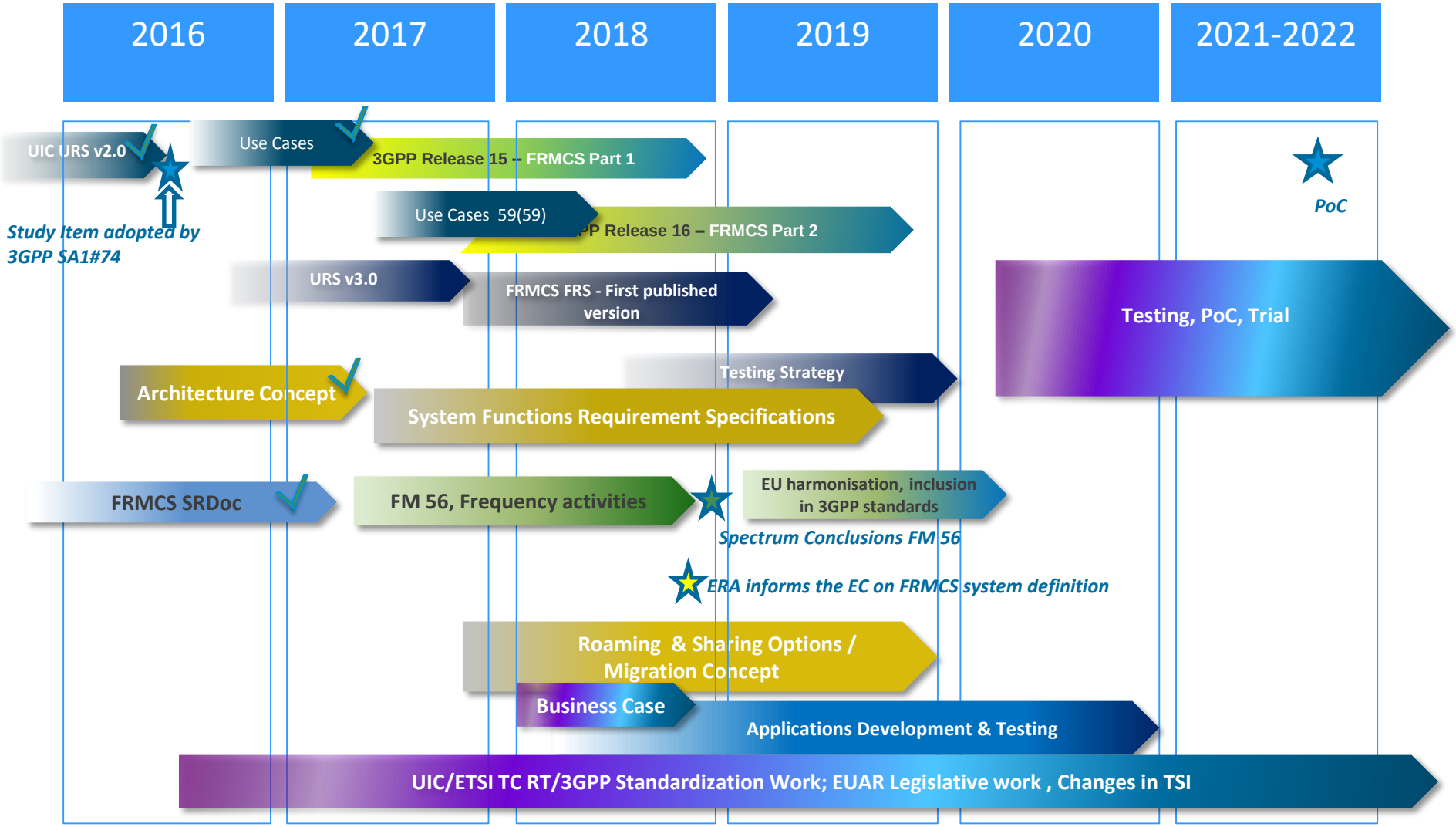
- Deliver Functional Requirements Specification
- Define a FRMCS system architecture model that offers flexibility
- Deliver System Requirements Specification

- Investigate Development & Test Approach for the Application layer
- Technical Migration Strategy

- Analyse requirements for frequency band, including during migration
- Approach ECC (together with ETSI and ERA) for frequency allocation, active involvement with FM56

- Coordinated with stakeholders and partners

# FRMCS Plan On A Page

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