

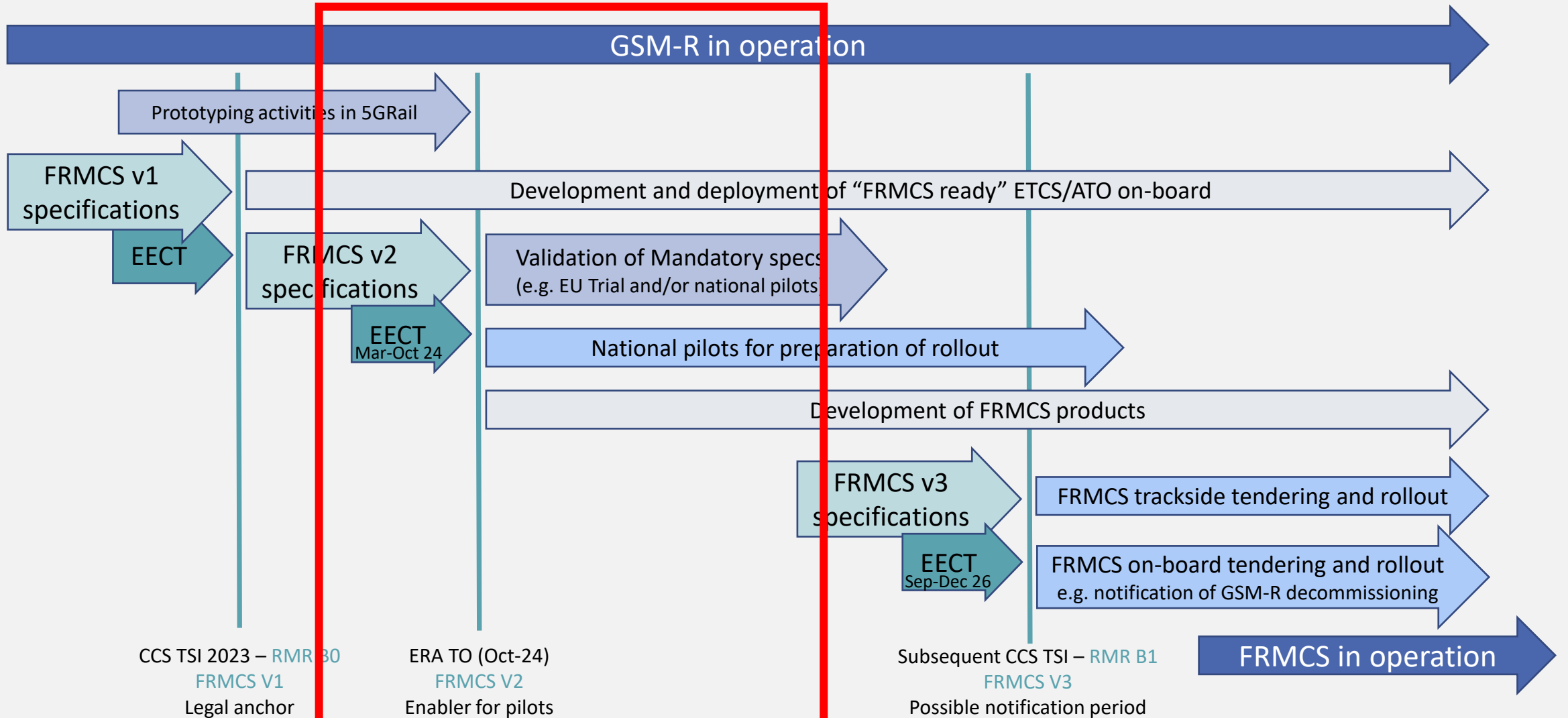
Towards a stable FRMCS V2 for testing

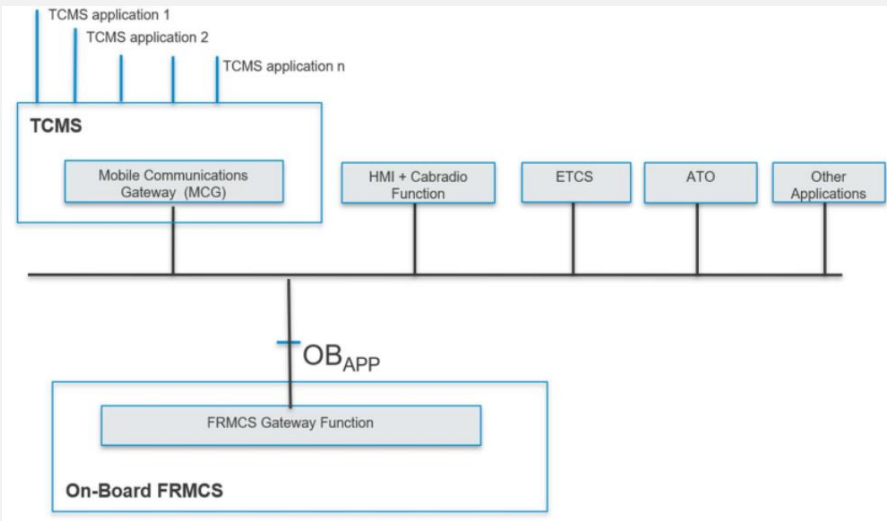
24.04.24 | ERTMS Conference, Valenciennes



EUROPEAN
UNION
AGENCY
FOR RAILWAYS

FRMCS v2/3 Timeline





FOR VOICE:

GSM-R successor, based on 3GPP 5G

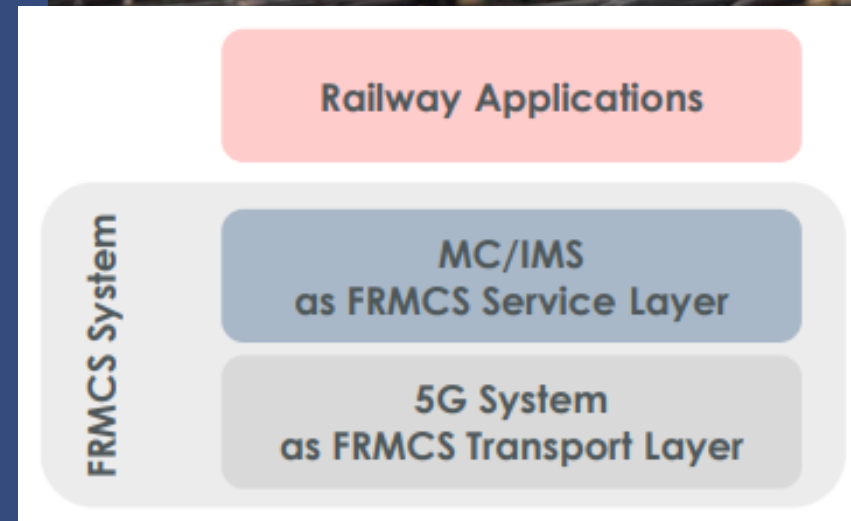
FOR ETCS/ATO: FRMCS = GSM-R

a telecommunication transport layer

NEW SYSTEM ARCHITECTURE!!

Based on applications, telecom gateway providing communication services

In FRMCS V2



5G Building Blocks / Mission Critical Services



Of-the-Shelf features and components
MCS: same requirements as the global critical communications industry (e.g. Public Safety)



ETSI specifications

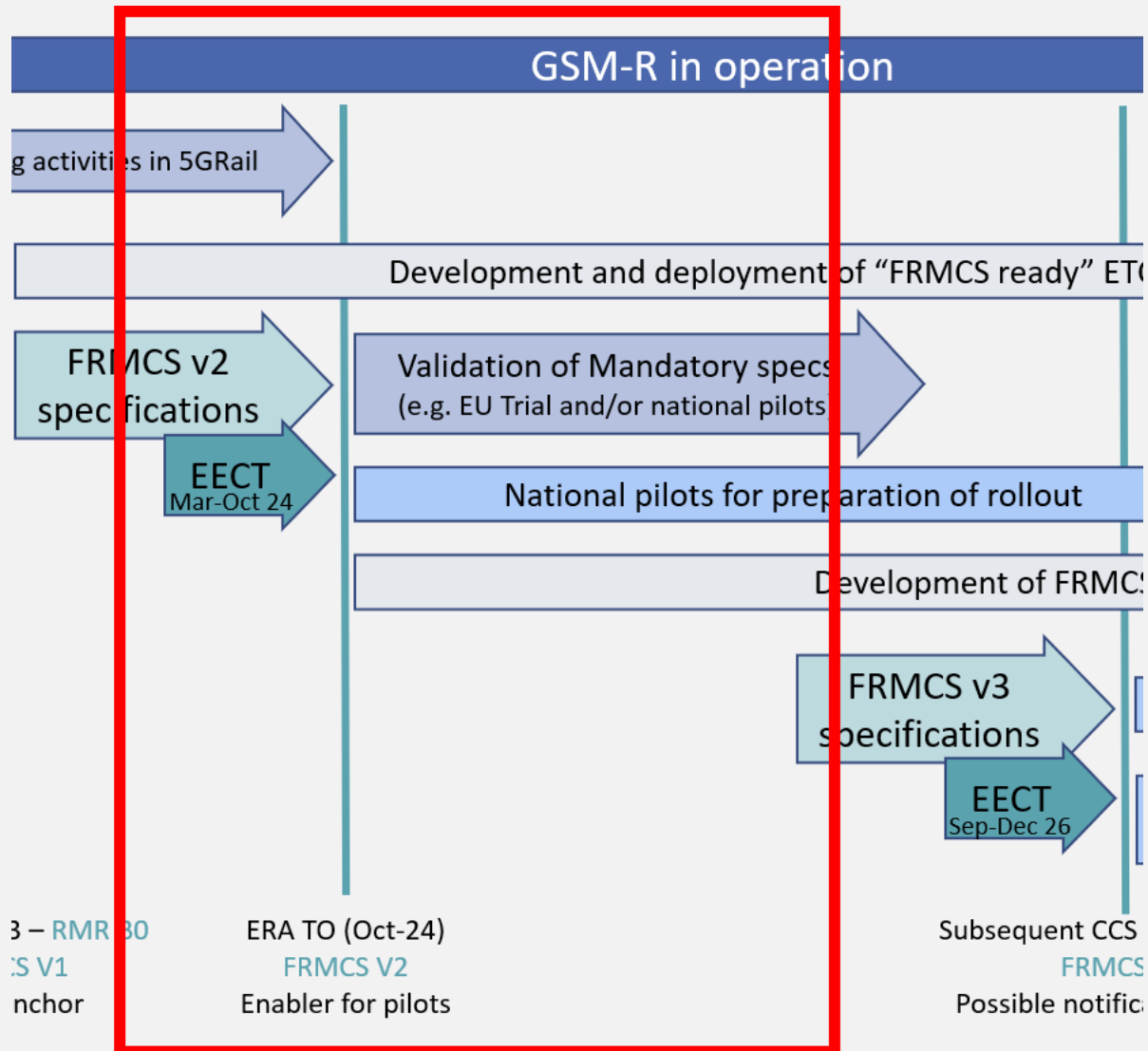
Currently in preparation,
planned availability Jan 2025



5G new frequency bands for Railway Mobile Radio

FRMCS 900 and 1900 MHz

FRMCS v2, where are we today?



V1.1.0 documents received:

- From UIC drafting teams
- Identification of requirements ready for V2
- Indication of other requirements still to be completed in V3 or later

Review process has started:

- **Planned between April and October 2024**
- **Consistency between specifications, coherence and completeness**
- **Matching of functional requirements and system requirements**

TARGET: to publish an Opinion with the V2 specifications by end of 2024

→ **BASIS FOR VALIDATION AND TESTING**

Applying Change Control Management (CCM) process

WHO is involved?

- ERA chairing the working group (EECT Radio)
- UIC editing team: chairs of the WG working in each specification
- CER, EIM, UNITEL, UNISIG

GENERAL PRINCIPLES

- 1) No comments expected on non-modified clauses
 - 2) Focus on requirements for V2, not on informative requirements for later (specific marking, for V3 or Vx)
 - 3) Discussion in meeting limited to discrepancies and open points
 - 4) No changes to GSM-R expected as a consequence of FRMCS introduction
 - 5) Except in some specific cases, no functional Mandatory requirements for which there are no SRS/FFFIS/FIS requirements
- If it is something needed for interoperability or operation: **M-V3**

→ **COMPLETENESS and COHERENCE of specs**

FRMCS V2 Review



Under a very tight schedule...

SESSION DATE	TYPE OF MEETING	MAIN REVIEW (other CRs review to be continued until finalisation)
09/04	EECT Radio	General EECT presentation for FRMCS v2 and meeting planning
22/04	EECT Radio	FRS#1
07/05	EECT Radio	TOBA FRS#1
21/05	EECT Radio	FRS#2
05/06 (new date)	EECT Radio	TOBA FRS#2
07/06	EECT Radio	SRS#1-(1/2)
18/06	EECT Radio	FFFIS#1 & SRS#1-(2/2)
02/07	EECT Radio	TOBA FRS#3 & FRS#3 (FRSs freeze)
16/07	EECT Radio	FIS#1
30/07	EECT Radio	SRS#2 & FFFIS#2
05/09	EECT Radio	SRS#3 & FIS#2
17/09	EECT Radio	FRS MI & FFFIS#3
01/10	EECT Radio	SS-037-3 & FIS#3 & TOBA FRS MI
22/10	EECT Radio	FFFIS MI & SRS MI & FRS MI
29/10	EECT Radio	SS-037-3 & FIS MI & TOBA FRS MI
05/11	EECT Radio	SRS MI & FFFIS MI & FIS MI
12/11	EECT Radio	
18/11	EECT Radio	
17/12	EECT Radio (GSM-R)	



GSM-R replacement:

Some IM indicated that may need to start procurement as early as **2030**

EU-Rail Report on FRMCS

Request of ERA Technical Opinion with V2 ready for testing
BY END 2024

CCS TSI does not give a deadline for Technical Opinion (TO) on FRMCS

BUT

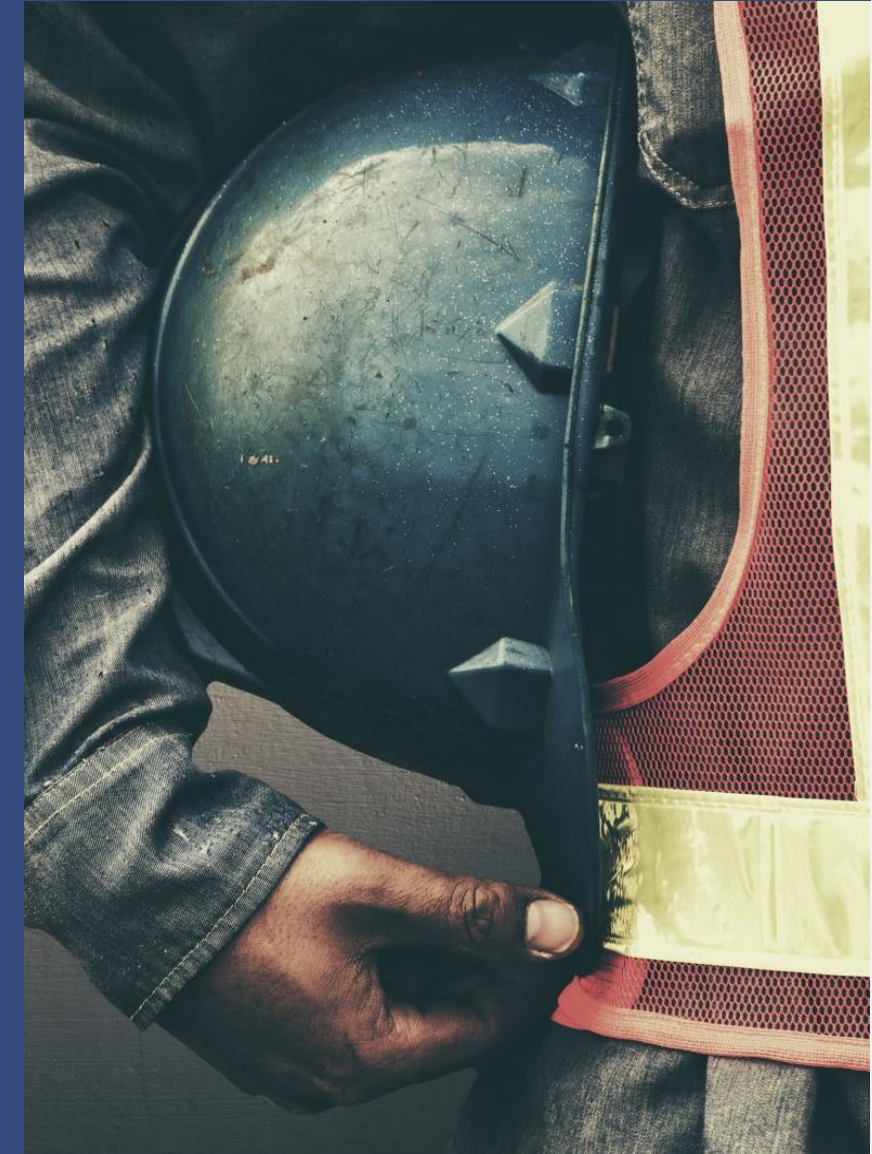
establishes after Technical Opinion, testing shall be based on it.

Call for projects for testing: “DESTINATION2”

Application process ongoing
Activity to be started by 2025

AGREEMENT: ALL EFFORTS of the sector towards achievement of TO in 2024

What is the rush for FRMCS V2?



V2 requirements:

those that shall be validated during
testing activities

“Candidate for CCS TSI”:

pre-identification of functionalities
needed for interoperability
(V2 or V3 requirements)

“V3 marked” requirements:

needed for the operation with FRMCS,
possible solutions may be tested

TO PROVIDE COMMON BASIS FOR THE TESTING OF

User needs



Replacement of GSM-R
Cross-border scenarios
(interconnexion FRMCS domains
& FRMCS and GSM-R only areas)



FRMCS Trackside

Radio Access Network (coexistence of GSM-R
and FRMCS, use of public operators)
Core Network (Mission Critical Services, Fixed
Transmission Networks, Dispatchers)
Interworking GSM-R/FRMCS



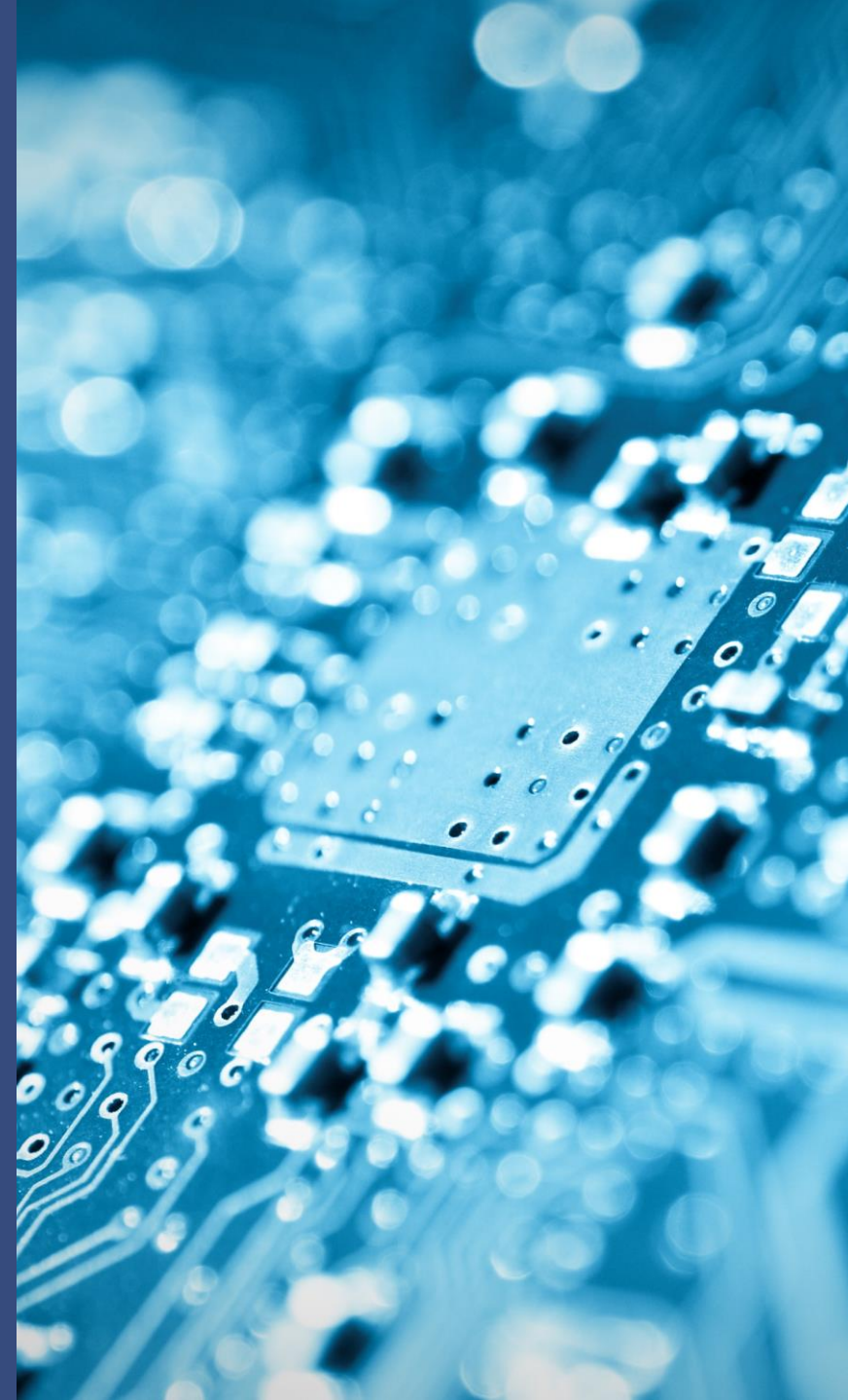
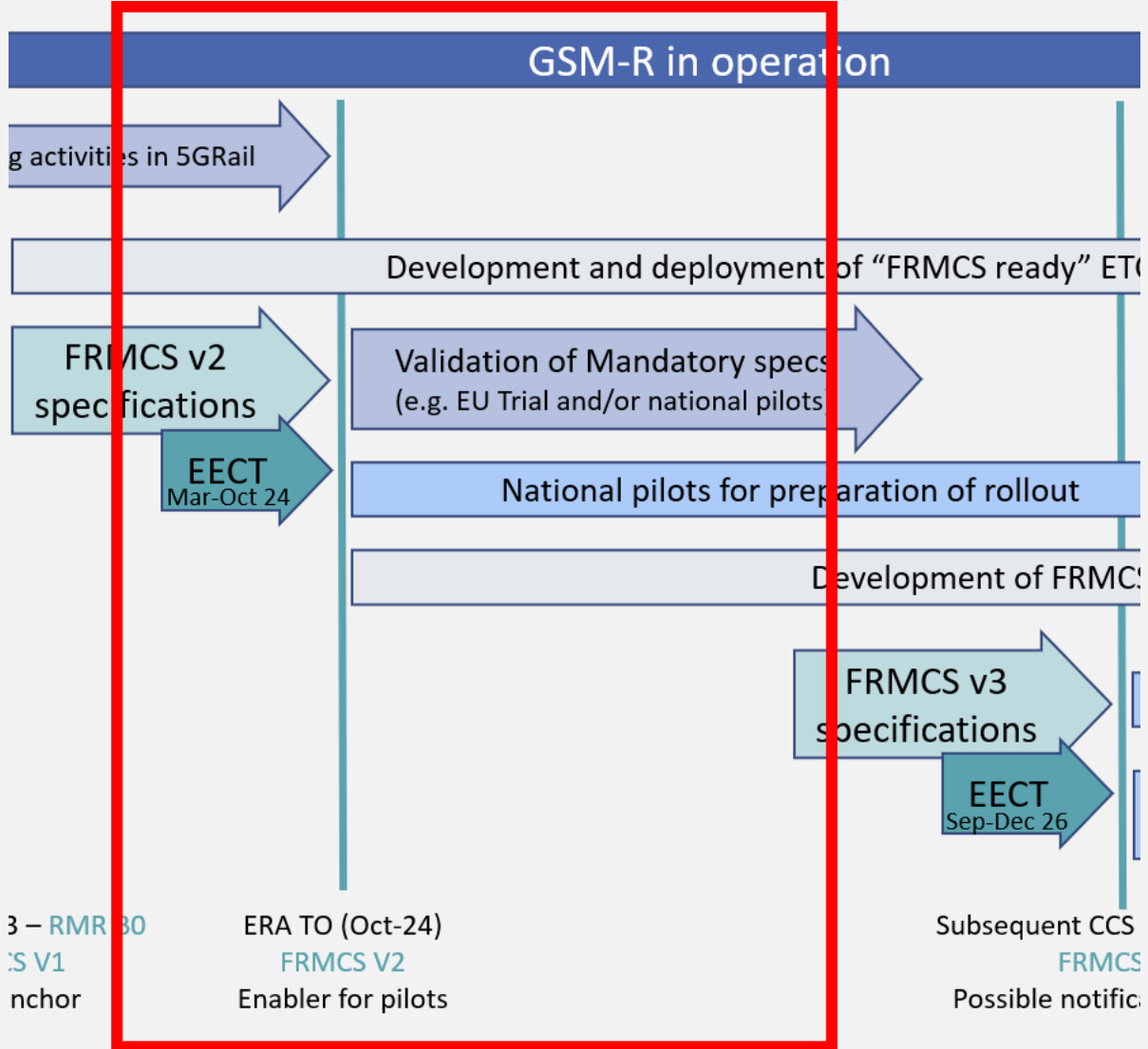
FRMCS ARCHITECTURE

ON-BOARD GATEWAY: voice application
and ETCS connected to it
VOICE APPLICATIONS at least with GSM-R
like functionalities

What will be in Technical Opinion?



Towards milestone TO 2024





THANK YOU

Moving Europe towards a sustainable and safe railway system without frontiers.

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