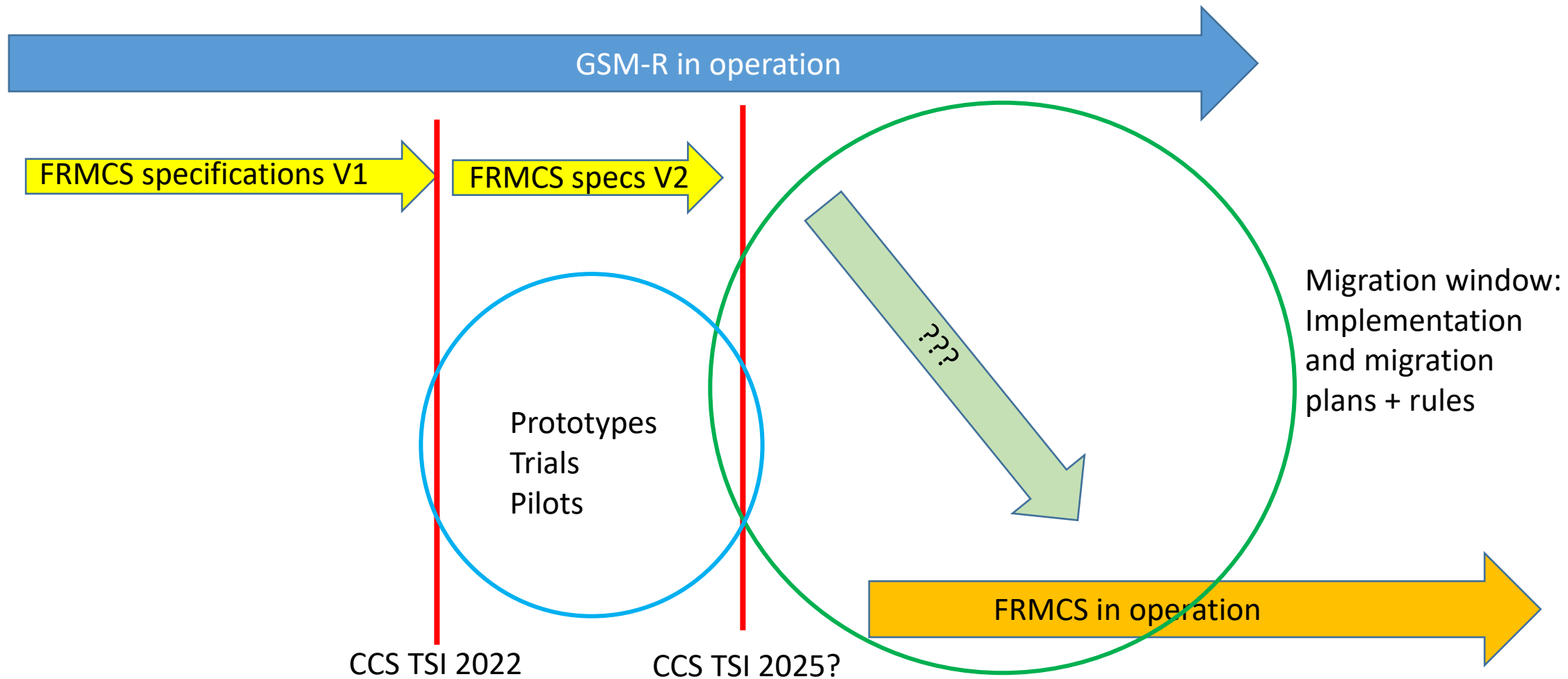


TSI CCS modifications on the communication systems and its resulting impact

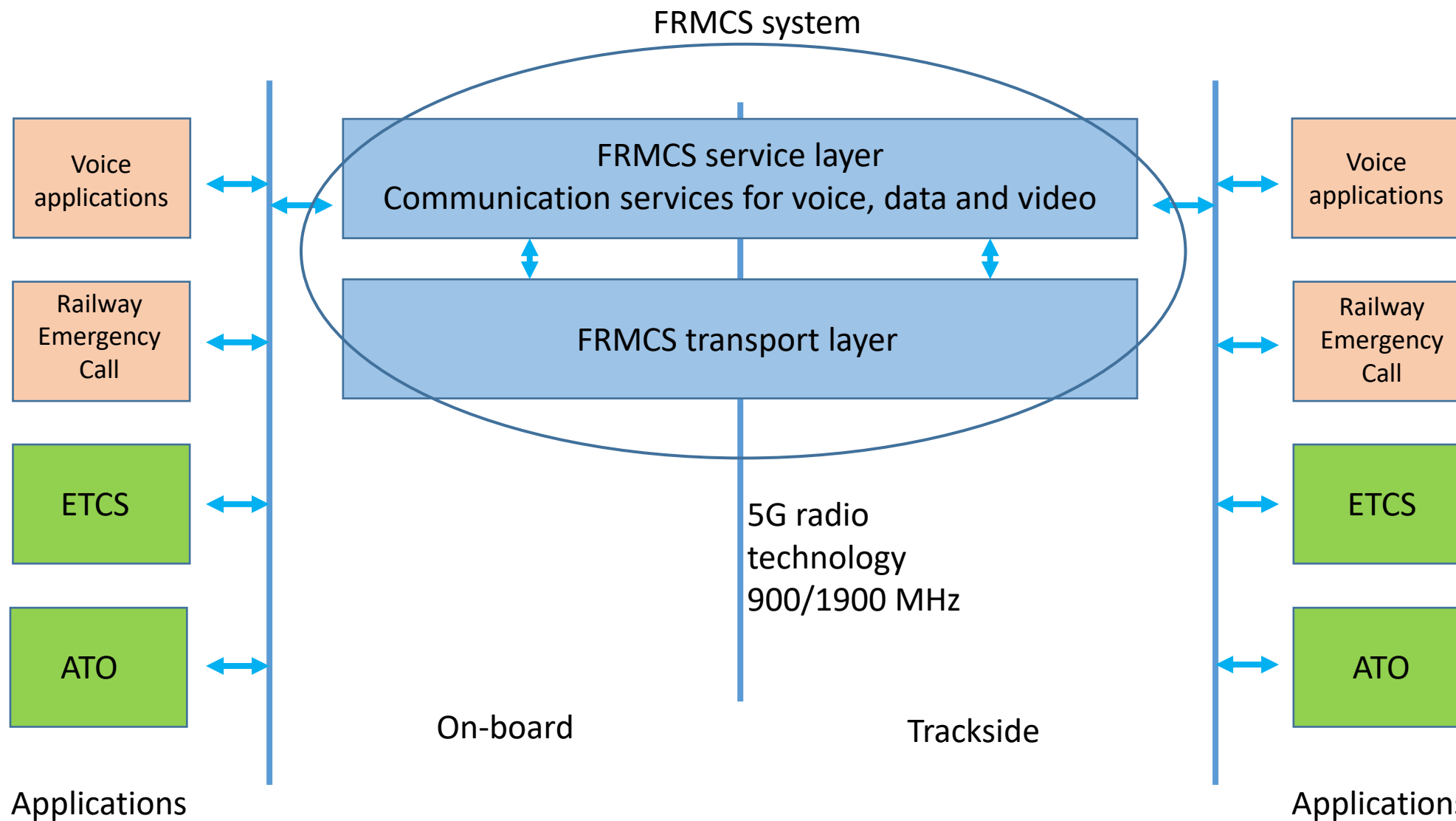
Chiel Spaans | ERA



Roadmap from GSM-R towards FRMCS

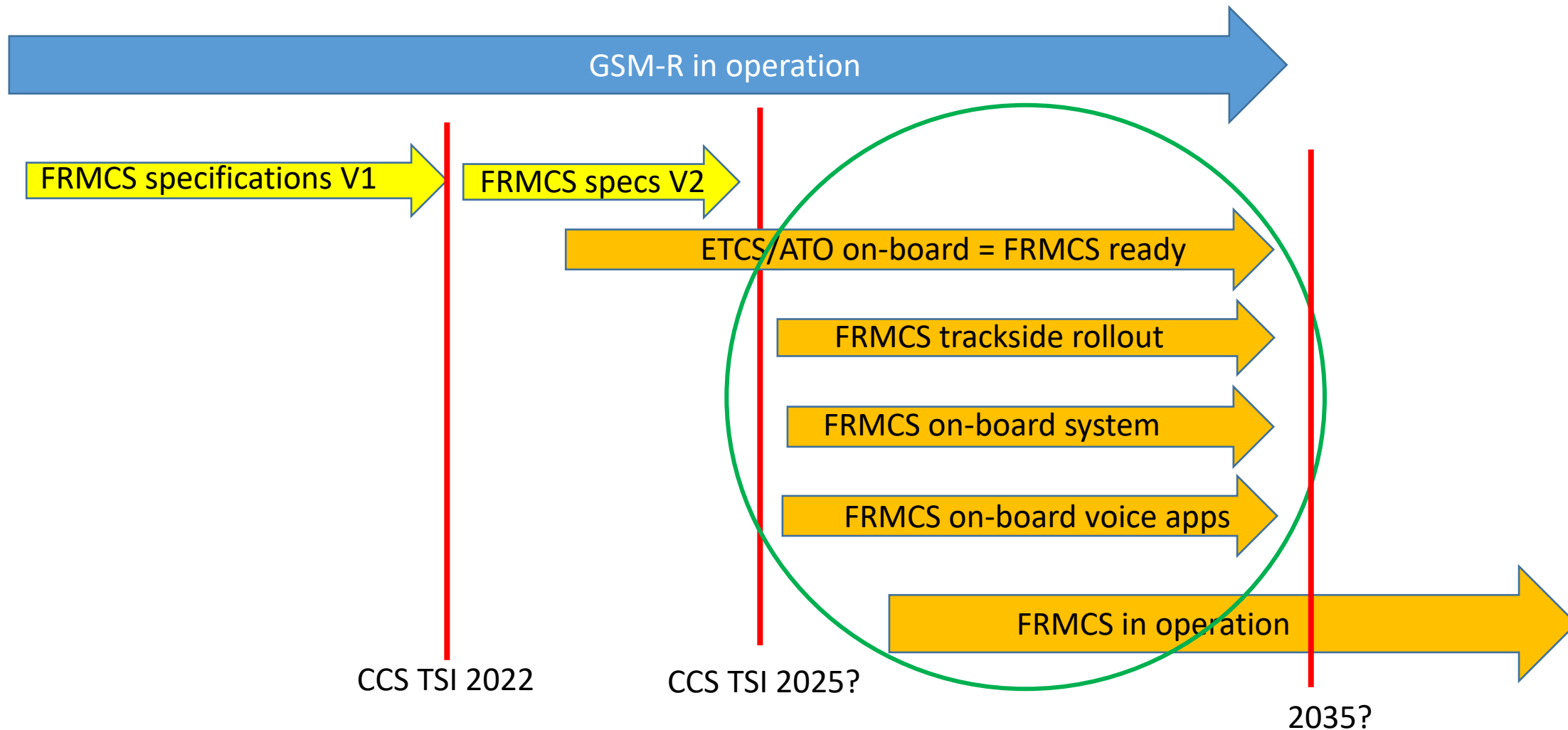


What is FRMCS?



- **Objective:** legal anchor for development of prototypes, trials, preparation of tenders, early implementers, etcetera
- **CCS TSI body text** contains:
 - Basic requirements for GSM-R and FRMCS, referencing to Annex A documents
 - Identification of high-level architecture building blocks -> Interoperability Constituents
 - Rules for the introduction of FRMCS and decommissioning of GSM-R
- **CCS TSI Annex A** contains the initial specifications of the FRMCS system onboard and trackside, e.g.
 - Communication functions: what services will be offered
 - Interfaces to applications: how to get access to and how to use these services
 - Airgap interface: radio technology and radio spectrum
- As well as
 - Specifications for ETCS and ATO in order to be able to use FRMCS
- **Future evolutions** of the Annex A documents may be published by ERA Technical Opinion(s) or in the next CCS TSI revision.

- **GSM-R continues to be a Class A system, no end-date defined yet.** However:
 - Decommissioning of GSM-R (network/line) *after installing FRMCS* to be announced 5 years in advance (minimum) and
 - Not earlier than 7 years after publication of on-board specifications (by ERA TO or in TSI)
 - “unless agreed otherwise between IM and concerned RU’s”
- **Introduction of a second Class A system, FRMCS, could start at any time**
 - Not (yet) mandatory for new/upgraded lines or new/upgraded vehicles
 - When introduced: mandatory requirements in CCS TSI are applicable
- **Member States shall develop FRMCS implementation plan and GSM-R decommissioning plans**
 - in coordination between IM and RUs (see National Implementation Plan) based on the rules above.



To be drafted right after the Workshops on Day 1.

- Migration plans from IM's
- Migration plans from RU's
- Topics addressed



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