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Sanja Holen

5G Vertical User Workshop
National plans and roadmaps towards broadband
Brussels, 12-13 February 2019



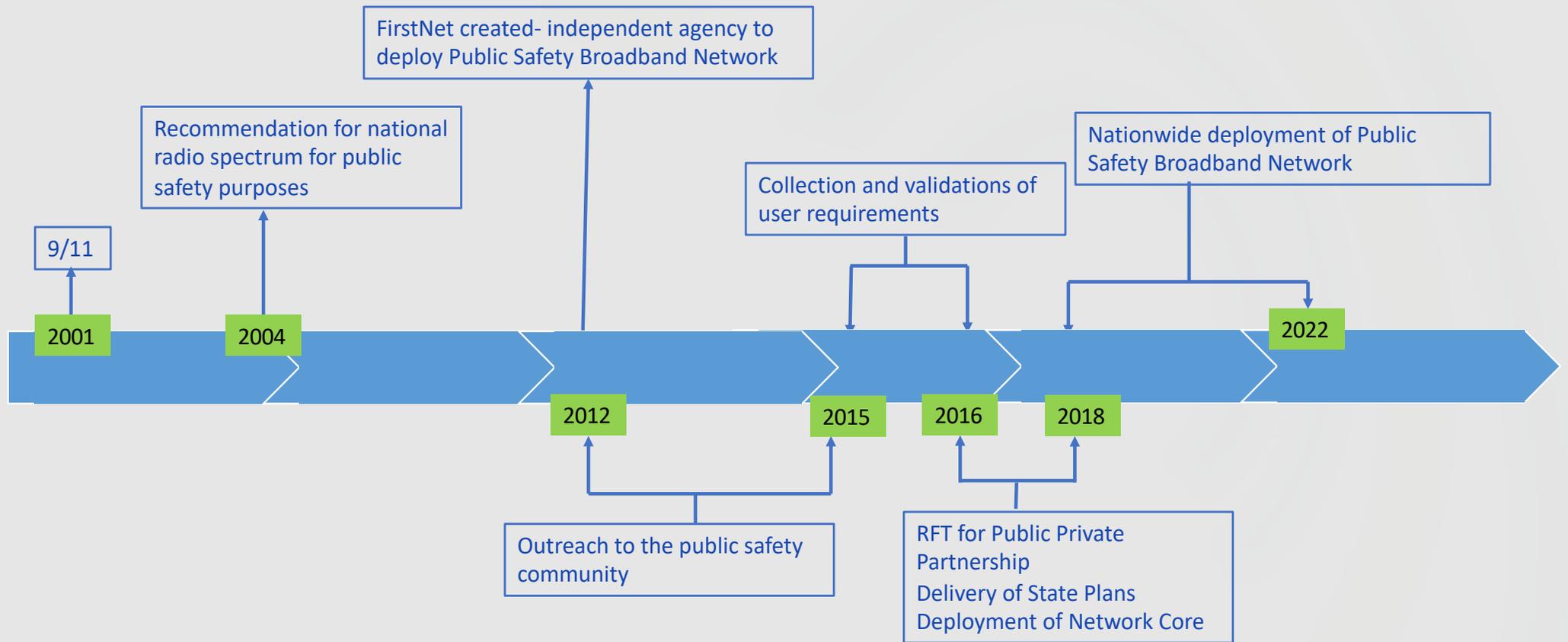
Overview of national broadband activities

United States of America

- FirstNet – dedicated frequency 2x10 MHz, band 14
- Contract between Firstnet and AT&T for 25 years
- Financing: commercial use using excess capacity of band 14



United States of America



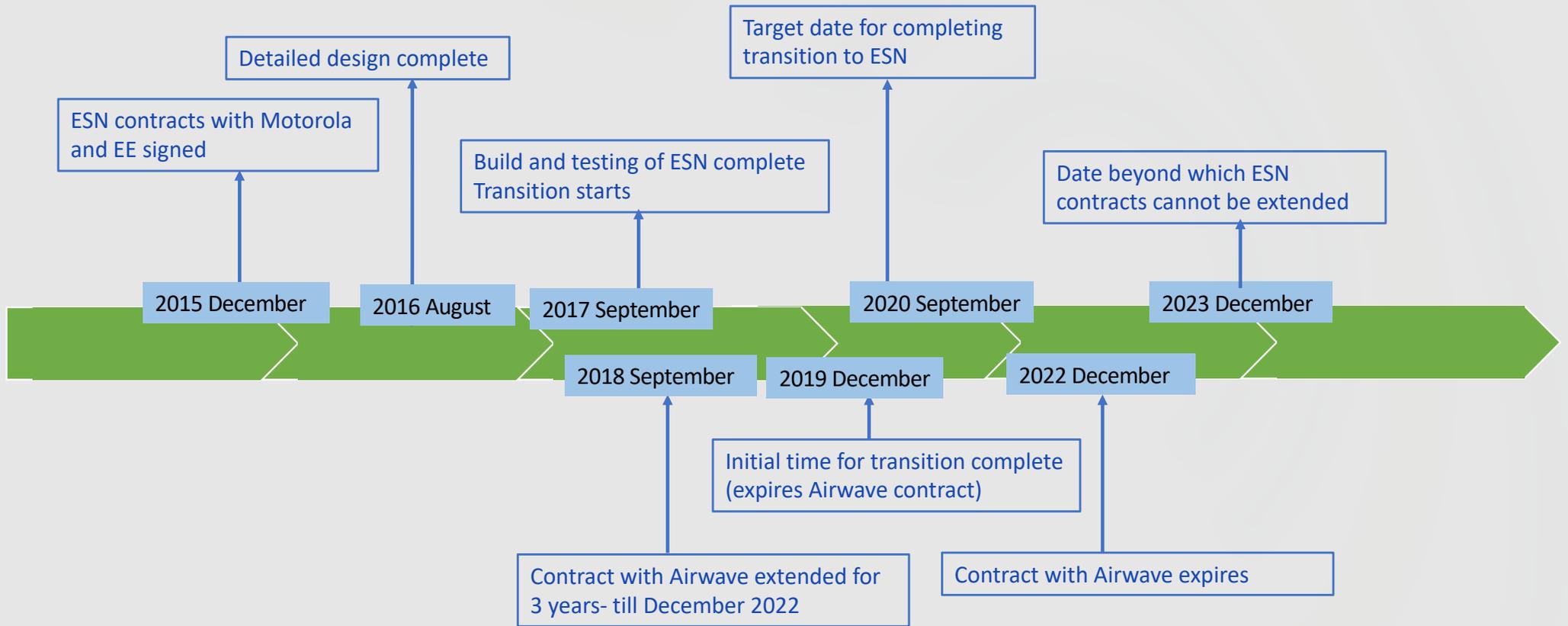
Overview of national broadband activities

Great Britain

- Motorola Solutions and EE operates Emergency Service Network (ESN)
- No dedicated spectrum
- In 2017 the UK telecommunications regulator granted license variations to EE to allow access to 20MHz of spectrum for the ESN in the 1900MHz band.



Great Britain



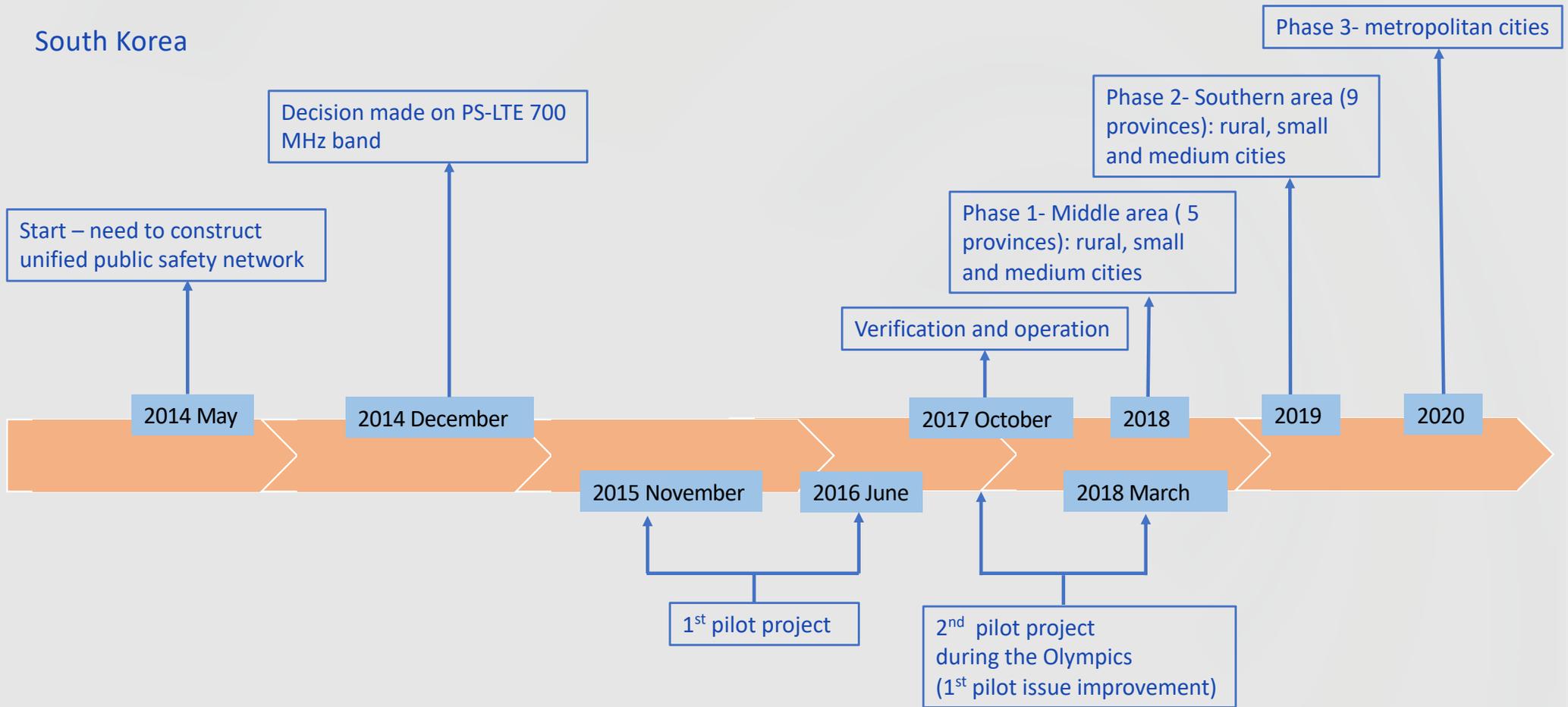
Overview of national broadband activities

South Korea

- SafeNet
- Samsung – infrastructure and devices
- Dedicated spectrum 2x10 MHz, band 14
- 3 separate networks:
 - PS LTE
 - LTE – R (railway)
 - LTE – M (maritime)



South Korea



Overview of national broadband activities

Australia

- PSMB – Public Safety Mobile Broadband

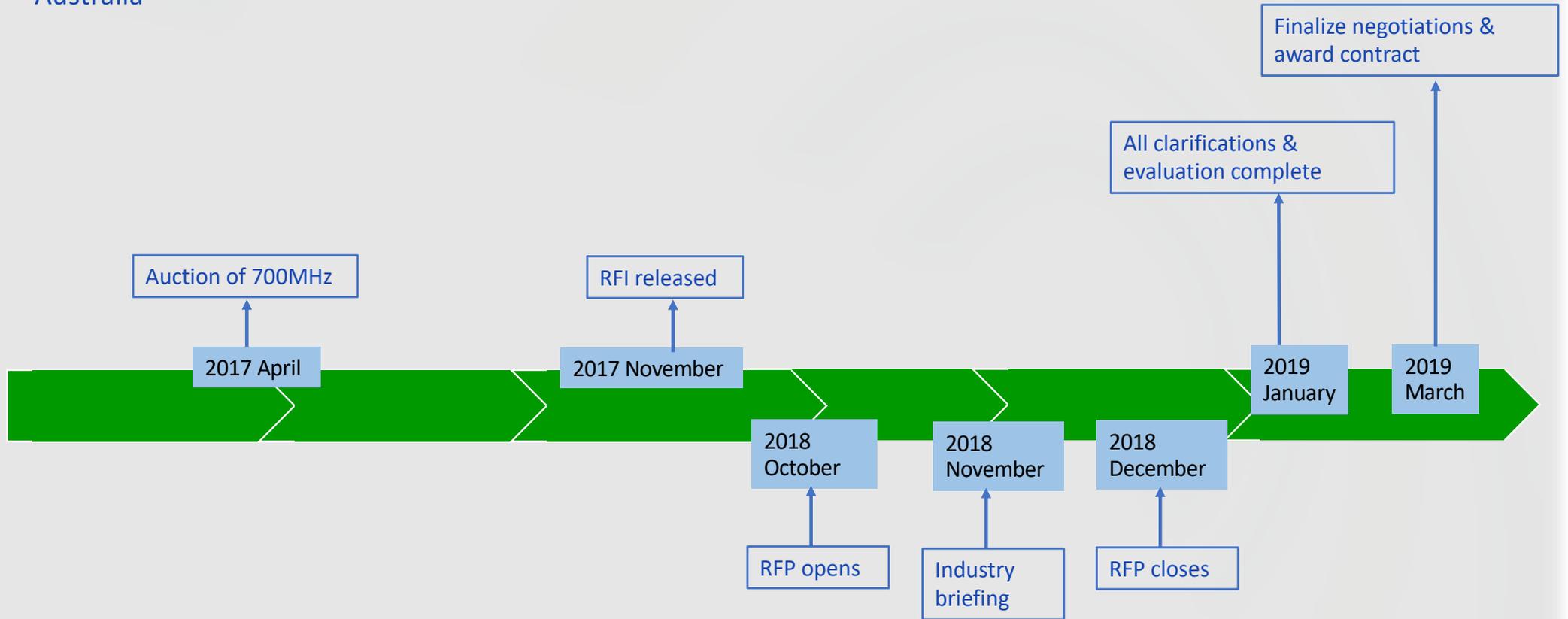
- National Objectives
 - Governmental Cooperation
 - Services
 - Coverage
 - Priority
 - Capacity
 - Standards
 - Availability
 - Security
 - Interoperability
 - Devices
 - Integration

- 113 High- Level Requirements

- Australian Communication and Media Authority- initiatives to improve spectrum provisions for public safety:
 - 10MHz in 800 MHz
 - 50MHz in 4.9 GHz
 - critical reforms in 400 MHz



Australia



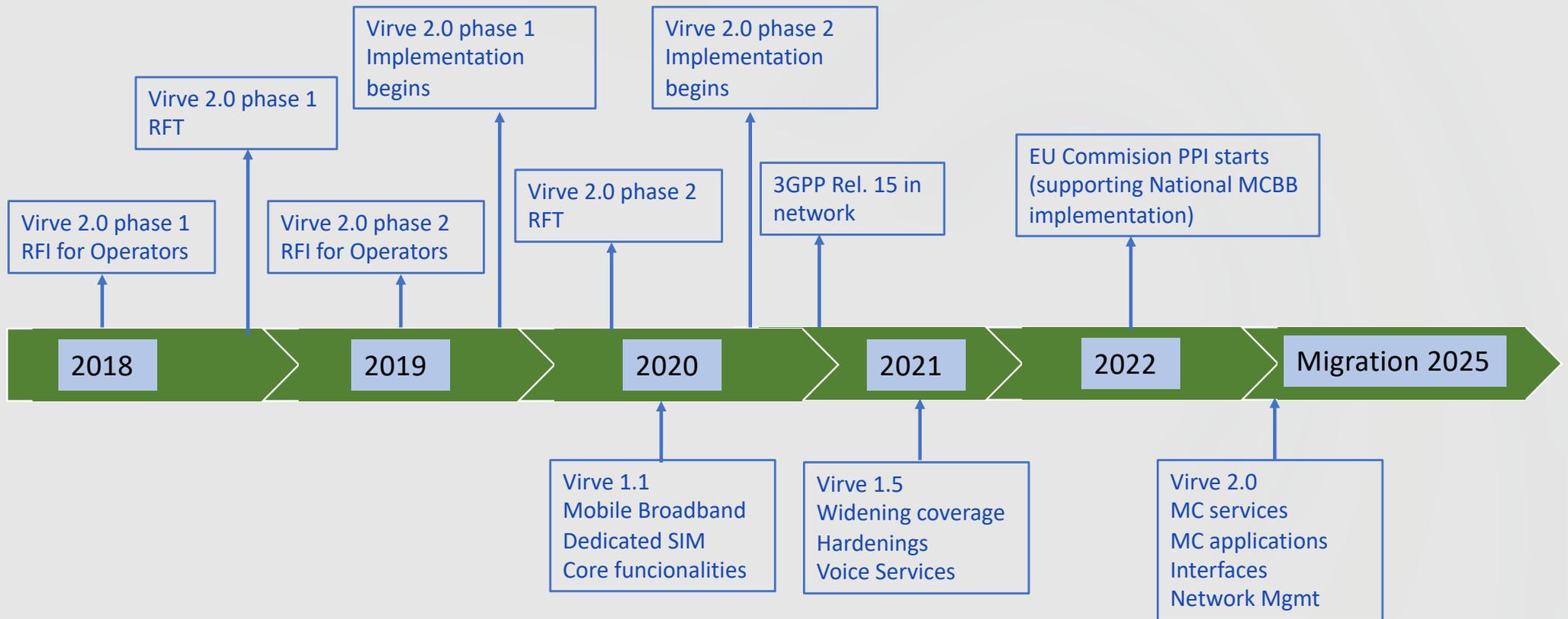
Overview of national broadband activities

Finland

- No dedicated spectrum
- Virve 2.0: two phases
 - phase 1: Prioritised mobile data connections, 2020
 - phase 2: Mission critical services (3GPP MCX services), 2022
- Migration from current Virve (TETRA) users to Virve 2.0 services, 2025



Finland



Overview of national broadband activities

France

- dedicated spectrum 3MHz in band 28 and 5MHz in band 68

- PCSTORM project, lots: 3GPP compliant
 - 1 – smartphones: ruggedized
 - deployable solutions: autonomy (LTE core embedded), resiliency, extended coverage
 - 2 – SIM card: France and international, security domain, roaming
 - 3 – MNO services: voice and data subscription, priority and preemption, capacity, QoS, multi MNO roaming and coverage
 - 4 – MCPTT app: multimedia group call, security, geolocalisation, messages, emergency call
 - 5 – gateway to legacy networks
 - 7 – high resilient solution on sensitives sites: hybrid dedicated networks, RAN sharing

- All lots – on field deployment before end of 2018



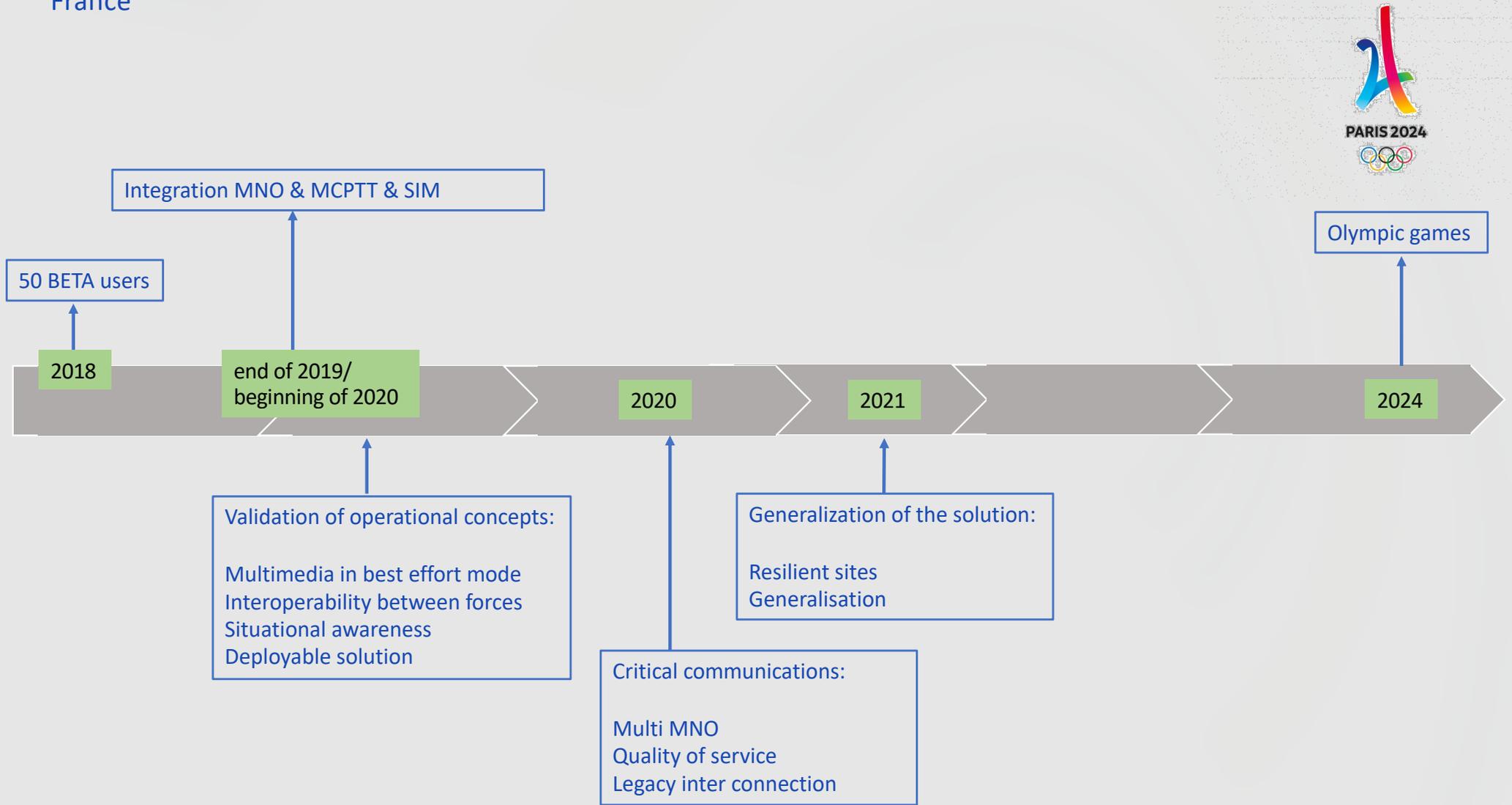
Overview of national broadband activities

France

- 2018 November – results for RFI for Air Ground Air with LTE and licensed shared access (LSA) – to allow tactical networks to use commercial spectrum as and when required
- 2019 February – results for RFI for Direct mode operation



France



Overview of national broadband activities

Belgium

- In 2014, Blue Light Mobile has given access to all GPRS/Edge and 3G MNO networks in Belgium
- In 2015 the Proximus 4G network was added, later on Base and Mobistar as well
- On the Proximus network, Blue Light Mobile subscribers always have priority
- During 2017-2018 negotiations between the PPDR MC operator ASTRID, the cabinet of the Telecommunication Minister, the cabinet of the Interior Minister, the regulator BIPT and the MNO's took place to prepare the creation of a regulatory environment:
 - to enable the use of the MNO (Radio Access Networks) for PPDR 3GPP MC services;
 - to allocate dedicated spectrum to PPDR in band 68 and band 28 for dedicated PPDR coverage (Special Locations).



Overview of national broadband activities

Netherlands

- 2014 Participation in 3GPP SA1 & SA6, still active
- 2015 Operational daily use of mobile broadband by the National Police (secure app-store)
- 2016 Program Grensverleggend IT by Defence (renewal program of the IT services for the Defence organization, including broadband services.)
- 2017 Dedicated spectrum study 2x8 MHz in 700 band for Public Safety
- 2018 Market studies for PPDR by TNO
 - Het nieuwe melden – New ways to engage the control room
 - Mobiel breedband ontwikkelingen – Future developments mobile broadband
 - Ontwikkelingen video in meldkamers – Video developments in control rooms
- 2019 Initiation dedicated program Mobile Broadband
 - all PPDR organizations involved
 - from study until realization
- 2020 Spectrum auction 2x8 MHz reserved for PPDR; Use not yet determined



Overview of national broadband activities

Estonia

- 2015 - state MVNO launched for broadband functionality - with three operators
Only one operator offers priority and pre-emption.
- No decision regarding 700MHz for now
- By the end of 2019- to get a total of the initial draft concept of public communications, which can come in addition to the additional requirements for critical communications
- By the end of February 2020- MC communication concept will be made



Overview of national broadband activities

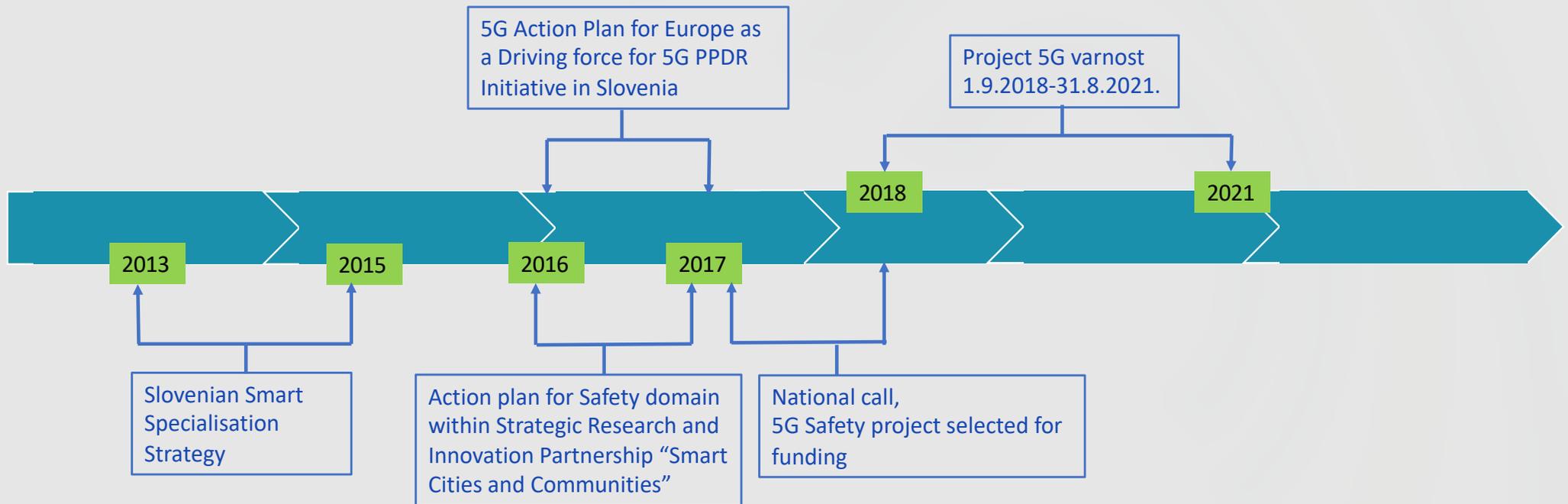
Slovenia

- 5G Enabled Public Safety Services and Applications – the project 5G varnost (5G Safety)
- 5G varnost –is to deliver **research and innovation** towards a **new generation of 5G-ready products and services** tailored to the needs of the **PPDR sector**
- 5G safety approach
 - Phase 1- Industrial research TRL3-4**, sub phases:
 - Bussiness Model and Innovations: MC Technologies Study, 5G PPDR Arhitecture, 5G PPDR Services and Applications
 - Studies and Conceptual Design for 5G PPDR ecosystem
 - Laboratory Prototyping and Validation
 - Phase 2- Experimental development TRL5-6**: Field prototyping and validation

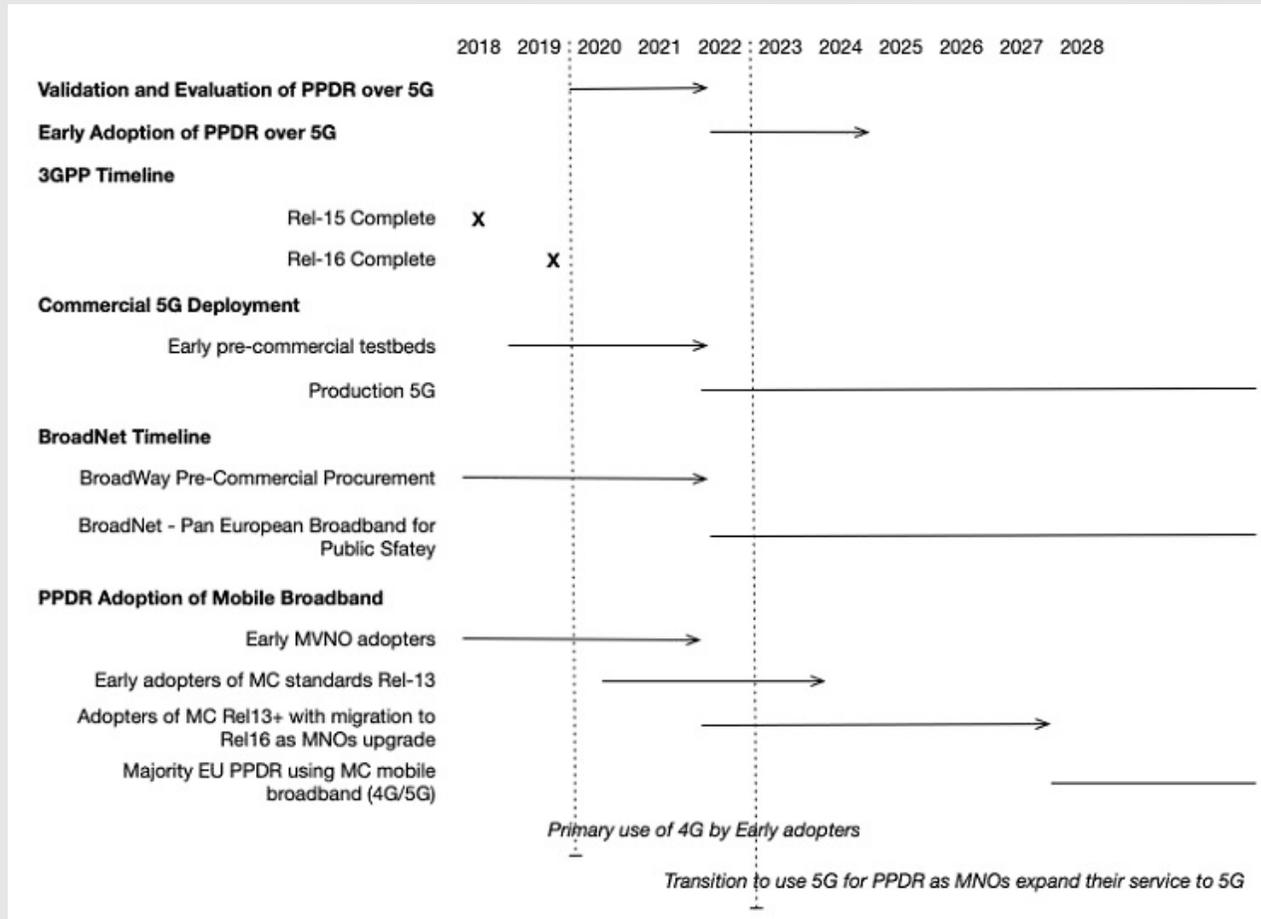


Overview of national broadband activities

Slovenia



5G timeframe



Thank you for listening!

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