



U.S.-Thailand 6 GHz Spectrum



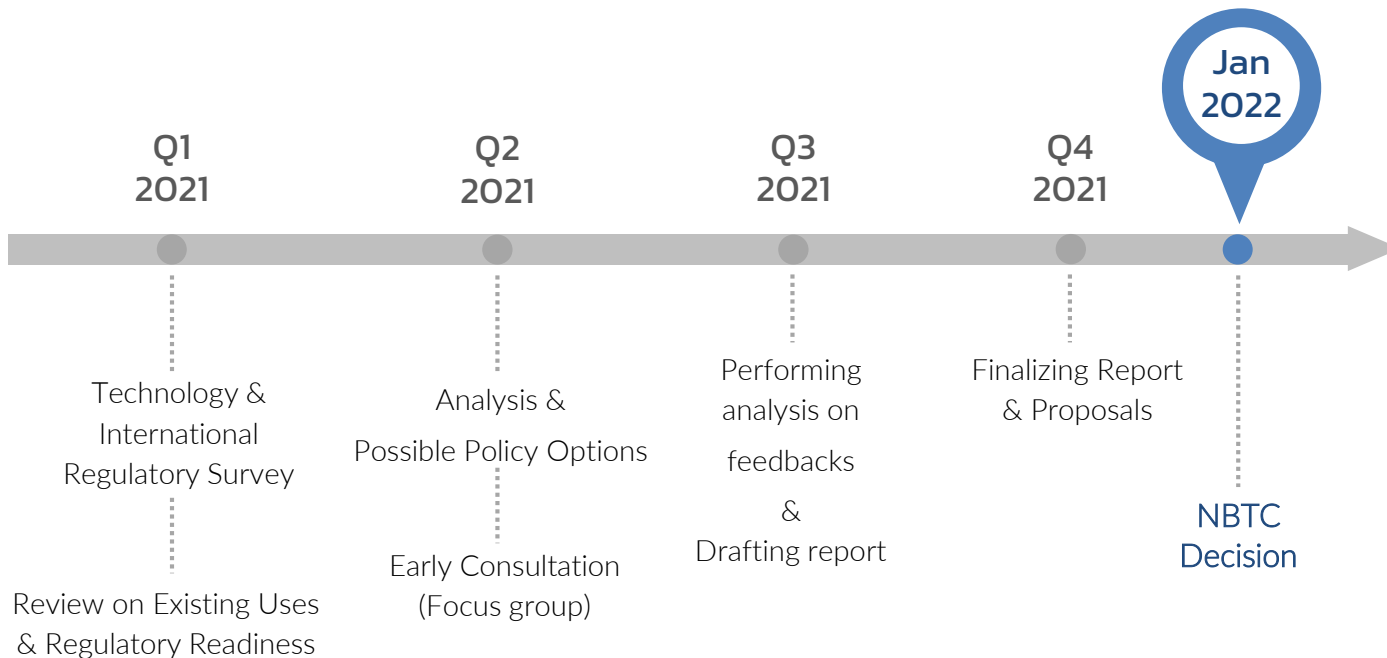
Regulatory Preparation 6 GHz Spectrum

U.S.-THAILAND 6 GHz Spectrum Virtual Workshop

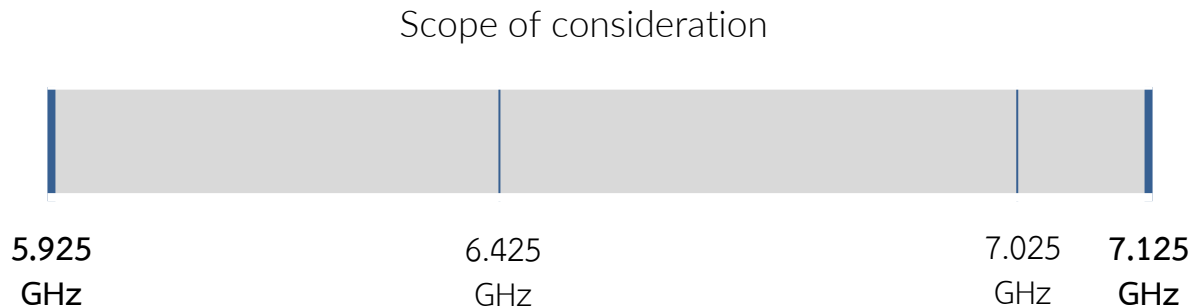
17 February 2022

Mr. Saneh Saiwong, Principal Engineering Expert

Timeline for 6 GHz Regulation Preparation



Studies on 6 GHz Spectrum



Study Issues

- + Technology trends
- + International regulatory trends
- + Sharing and compatibility studies
- + Current uses and incumbents
- + Balance between licensed and unlicensed spectrum
- + Opinions and feedbacks from stakeholders

Technology trends in in 6 GHz band

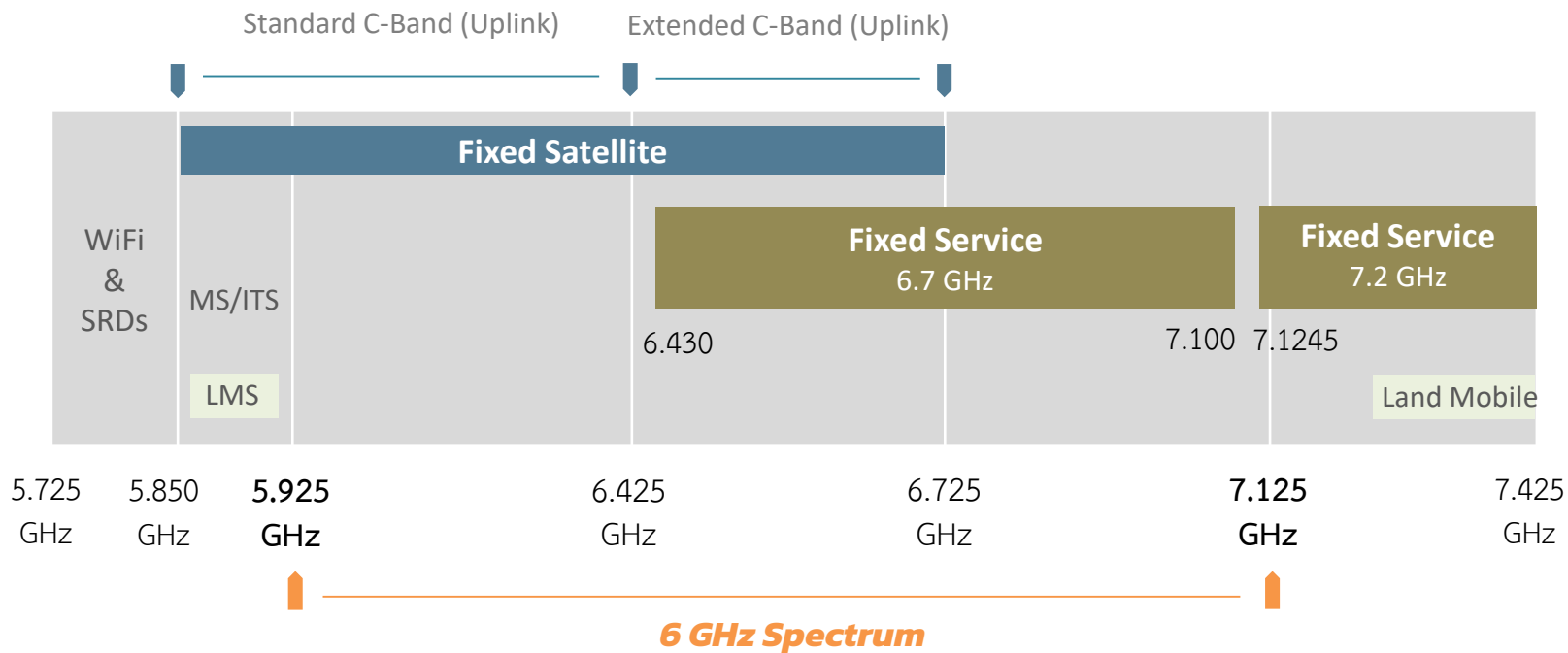
Licensed use



Unlicensed use

-  802.11 ax
-  802.11 be
-  NR-U

Co-existence with incumbents



Existing primary services

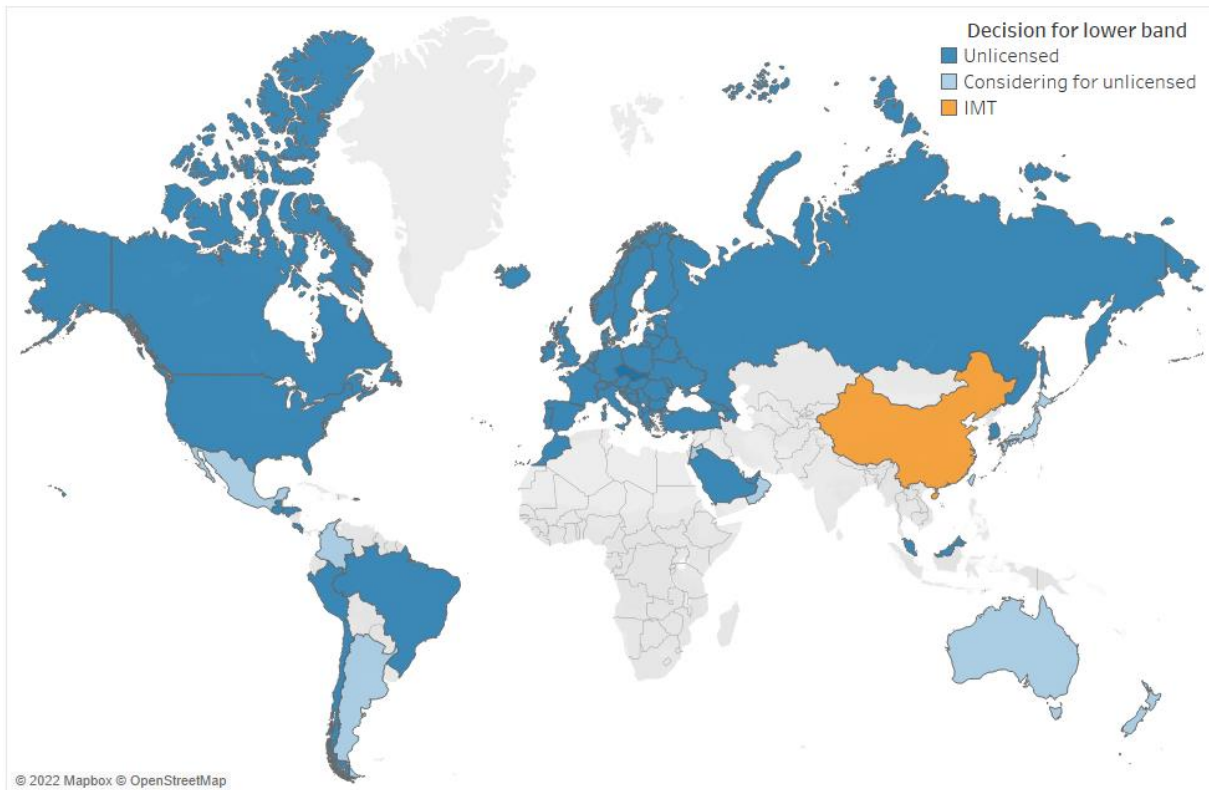
+ Fixed Service

- 6.7 & 7.2 GHz: Located Nationwide (2000+ stations)

+ Fixed Satellite Service (uplink)

- C-Band: Located Nationwide
- Extended C-Band: Mostly located in Central Thailand

Decision of countries on 5.925–6.425 GHz (*Lower Band*)



Source: Office of NBTC, "Study report on Thailand's future regulation for 6 GHz spectrum ", November, 2021

Sharing and Compatibility Studies

+ **FCC 20-51 Report and order** (*entire 6 GHz band*)

Unlicensed Use of the 6 GHz Band; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz

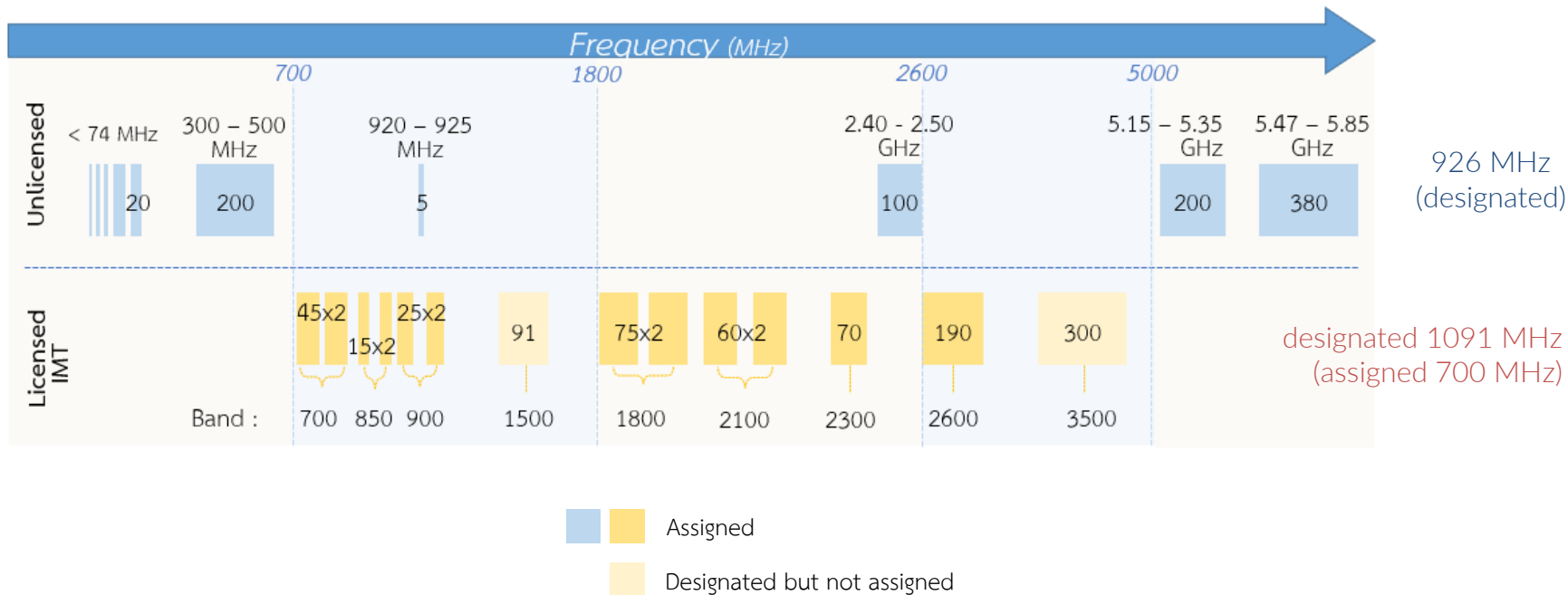
+ **ECC Report 302** (*lower 6 GHz band*)

Sharing and compatibility studies related to Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) in the frequency band 5925-6425 MHz

Licensed IMT vs. unlicensed spectrum

(Thailand scenario)

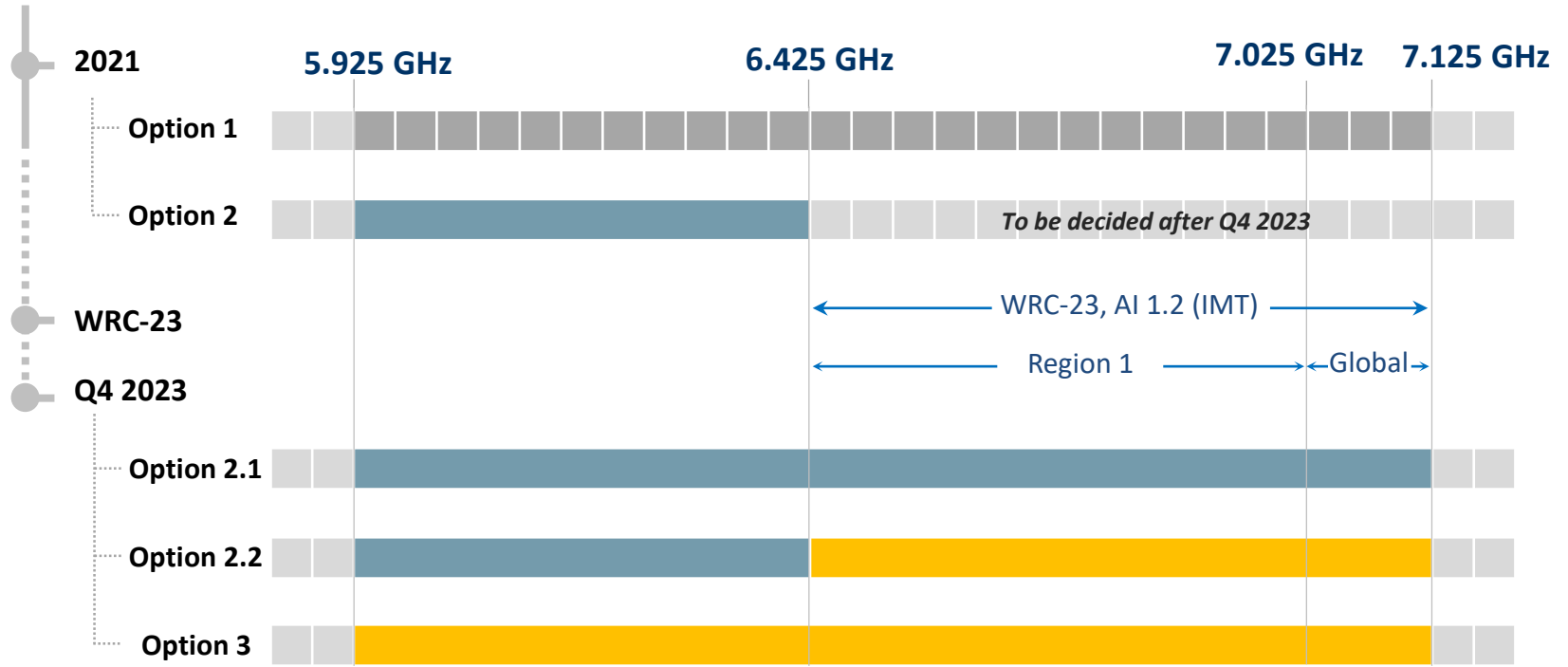
mid & low bands



Policy Options

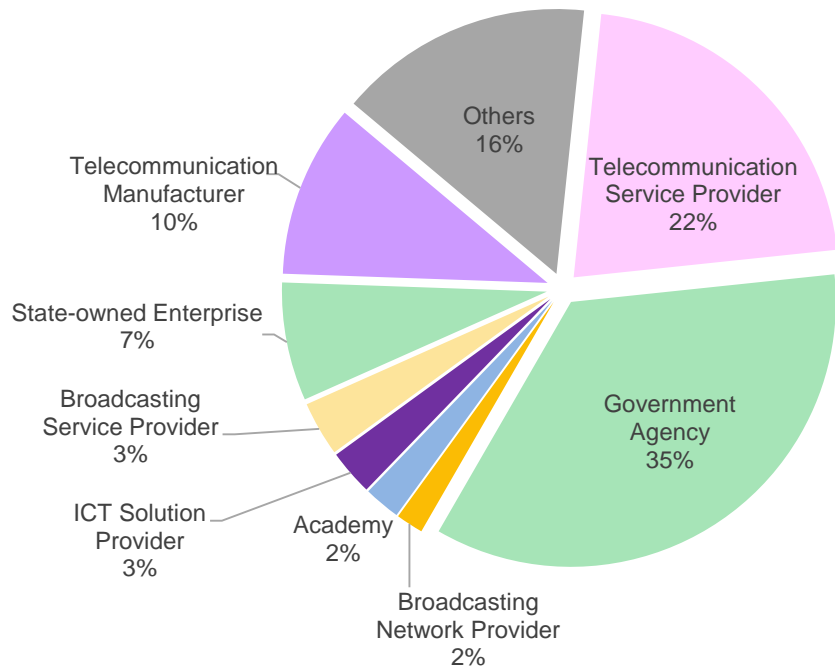


Timeline



Early Consultation

180 participants :



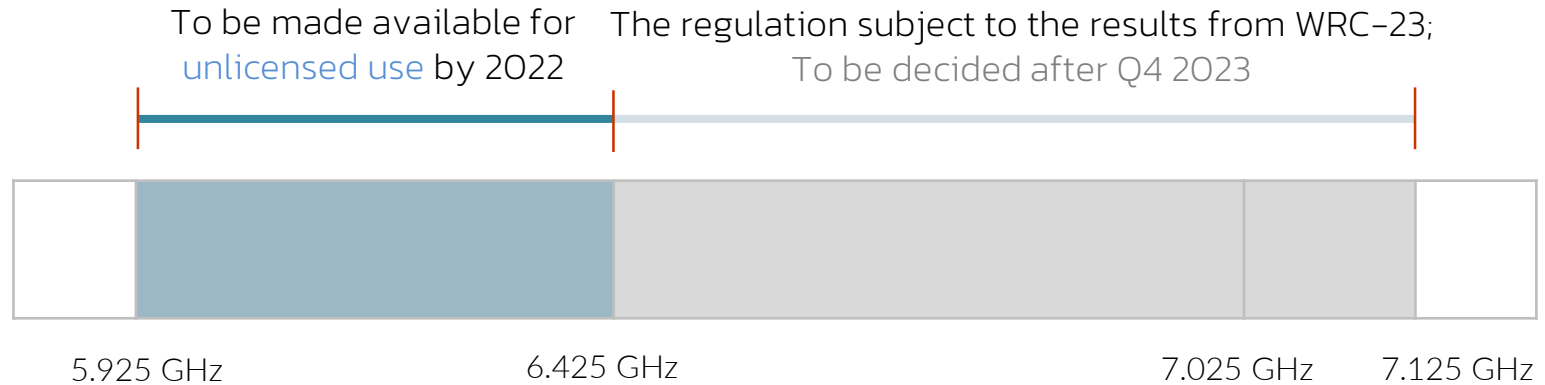
Issues raised :

- Spectrum demand
- Balance between licensed and unlicensed spectrum
- Compatibility with incumbent services
- International harmonization development

Key factors

- + Greater harmonization on international scale
- + Possibility of co-existence with incumbent services
- + Balance between licensed and unlicensed spectrum, and options for users
- + Equitable access to the spectrum
- + Promote innovation

Results from regulatory studies and *NBTC's decision*



Issues in consideration

1

Transmission Power limits

Optimal transmission power limits that allows new systems to co-exist with incumbents in 5.925 - 6.425 GHz

2

Spectrum Access Criteria

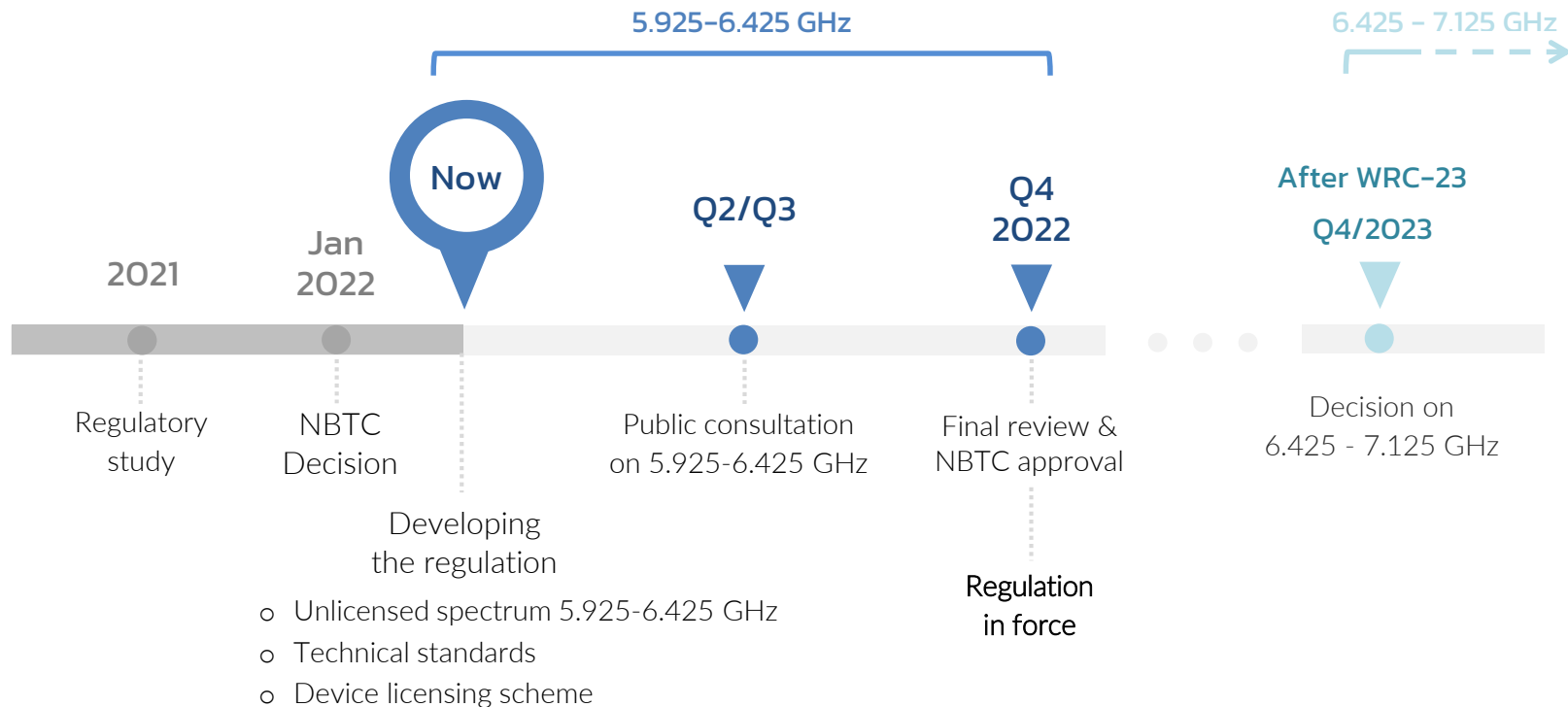
Evaluation of necessity of defining spectrum access criteria which allow a number of devices to share the spectrum

3

Device Licensing Scheme

Consideration of specific conditions for devices with high power to manage interference

Timeline for 6 GHz Regulation Development



Additional issues

Additional comments are welcomed.

- Public vs. Private use
- Socioeconomic benefits
- Ecosystems
- FTTH & Infrastructure to maximize the benefit of allocating spectrum for unlicensed use

Thank You