Office of The National Broadcasting and
Telecommunications Commission

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PRINCIPAL ENGINEERING EXPERT

Status of 6 GHz band and Open RAN
IN THAILAND

24 April 2023

presentation

OUTLINE

Status of 6 GHz band and Open RAN in Thailand

6 GHz band

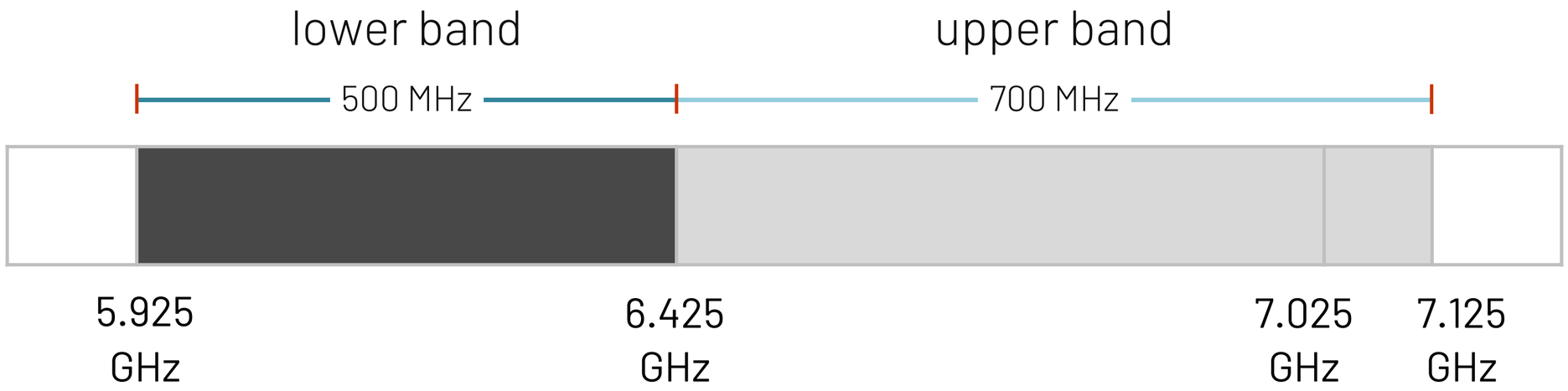
- Regulatory Developments
- Future & Opportunities
- Next Steps

Open RAN

- Current Status
- NBTC's Consideration

6 GHz band

Thailand considers the 6 GHz band
as two separate sub-bands



Collaboration between Thailand and US

Virtual Workshop on “U.S.-Thailand 6 GHz Spectrum”

February 17 - 18, 2022

– Organized jointly by USTDA, U.S. Embassy Thailand, MDES, ONDE and NBTC

– More than 100 participants from telecommunication industry, governmental organizations and universities

– NBTC’s position at that time :

  • To open 5.925 – 6.425 GHz for unlicensed use

  • To monitor international developments, including outcomes of WRC-23, before making decision on 6.425 - 7.125 GHz

Lower 6 GHz

5.925 – 6.425 GHz

2021

Regulatory study

2022

Q1 NBTC decision on the use of the lower 6 GHz band

Q2 Development of regulations for unlicensed use

Q3-4 Public consultation

2023

Q1 Consideration on the consultation responses
Revision of the regulations

Q2 Approval of the regulations
Expected effective date: May 2023

2021 Regulatory study

2022

- Q1: NBTC decision on position for upper 6 GHz band

2023

We're here

- Q2-4 / Q1-3:
  - Closely monitoring the development on related issues on international levels
  - Information exchanges with domestic and international stakeholders
  - Preparations for related issue of WRC-23 (APG-23)
- Q4: ITU World Radiocommunication Conference 2023 (WRC-23)

Upper 6 GHz

6.425 – 7.125 GHz

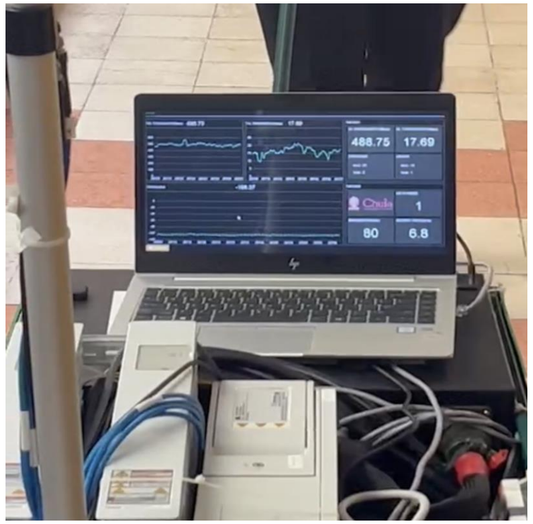
Future & Opportunities

Thailand initiates the scheme of regulatory sandbox to explore the feasibility of potential technologies in the upper 6 GHz and other frontier frequency bands.

5G Field Trials

for mobile broadband in 6.425 – 7.125 GHz

- In sandbox area of Chulalongkorn University
- Coverage and capacity test for outdoor and indoor
  - Outdoor NLOS coverage approximately up to 800 m
  - Outdoor throughput by approximate:
    - 1100/130 Mbps at 250 m LOS
    - 650/20 Mbps at 500 m NLOS
  - Indoor is in progress



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Wi-Fi 6E Trials

for medical use cases in 6.425 – 7.125 GHz

- In upcoming sandbox areas in Ramathibodi Hospital and Chakri Naruebodindra Medical Institute (CNMI), Mahidol University
- Infrastructure and device capability test for new use cases
  - XR Clinical Anatomy
  - Holo Patients (Interactive learning 3D)

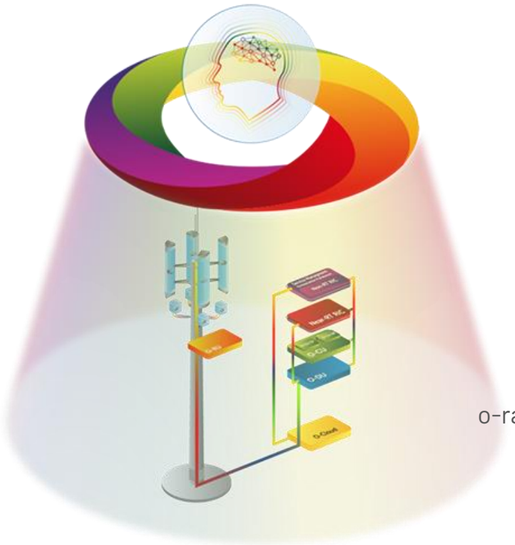
Next step

on 6.425 – 7.125 GHz

- Consider the technology trends, domestic demand and positions of ITU members in WRC-23
- Continue to monitor the developments in related issues both in domestic and international levels
- Open and inclusive consultation with stakeholders
- Make a decision on the use of the upper 6 GHz band

Open RAN

- Refers to disaggregated radio access network with open interfaces between network components sourced from multiple suppliers
- Made possible by a set of industry-wide technical standards to enable service providers the use of non-proprietary RAN components from a variety of vendors
- Driven by O-RAN Alliance
  founded in 2018 by AT&T, China Mobile, Deutsche Telekom, NTT DOCOMO and Orange



o-ran.org

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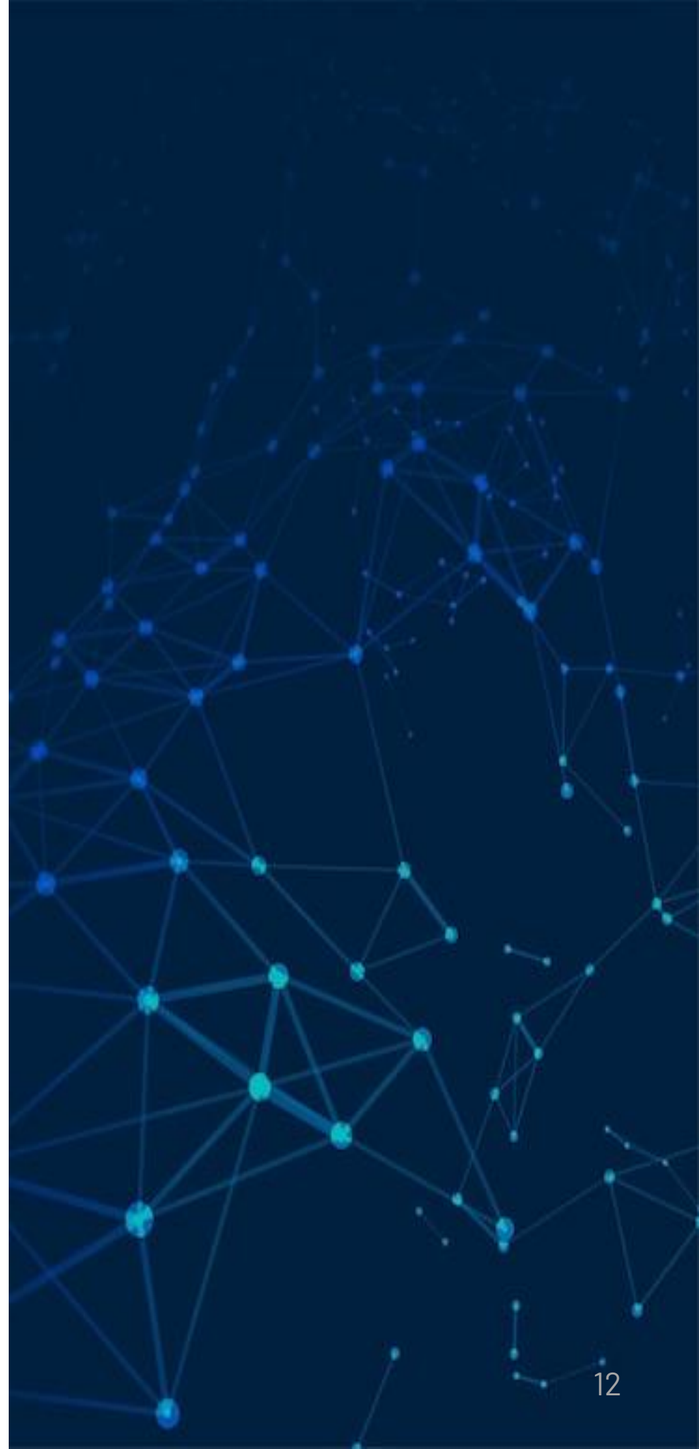
Expected Benefits of Open RAN

for telecommunication industry

- Increase vendor diversity and avoid ‘lock-in’
- Promote the competitions and ecosystem growth
- Promote innovation of non-proprietary hardware components, software, and systems
- Reduce cost of ownership, e.g., hardware implementation, maintenance and management
- Create opportunities for service providers to optimally provide private networks managed by software for different use cases



NBTC

As the regulator, we…

- Encourage development and use of technology neutrality,
- Raise awareness and motivate service providers to select the best choice for their network implementation and expansion,
- Collaborate with stakeholders to review regulatory difficulties for the emerging of Open RAN,
- Eager to hear what we can do more to promote Open RAN concept and implementation.

Thank You

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