



Country practices on 5G :

THAILAND

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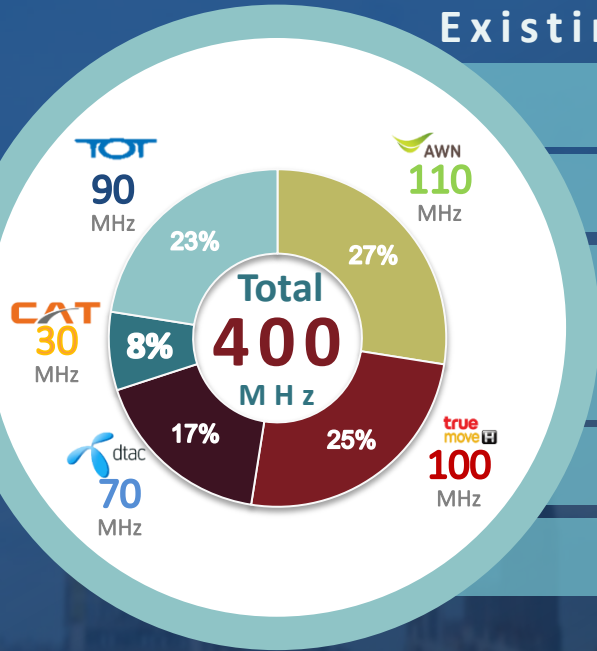
The office of National Broadcasting
and Telecommunication committee

Outline

- States of arts
- Spectrum Roadmap
- C-band situation and field trial
- Regulatory sandbox
- Spectrum Auction 2020

THAILAND IMT Spectrum

Existing IMT band



700 MHz : 2 x 30 MHz

850 * MHz : 2 x 15 MHz

900 MHz : 2 x 25 MHz

1800 MHz : 2 x 40 MHz

2100 * MHz : 2 x 60 MHz

2300 * MHz : 60 MHz

To be used for IMT

700 MHz : 2 x 15 MHz

2600 MHz : 190 MHz

26 GHz : 2.75 GHz

28 GHz : 2.5 GHz

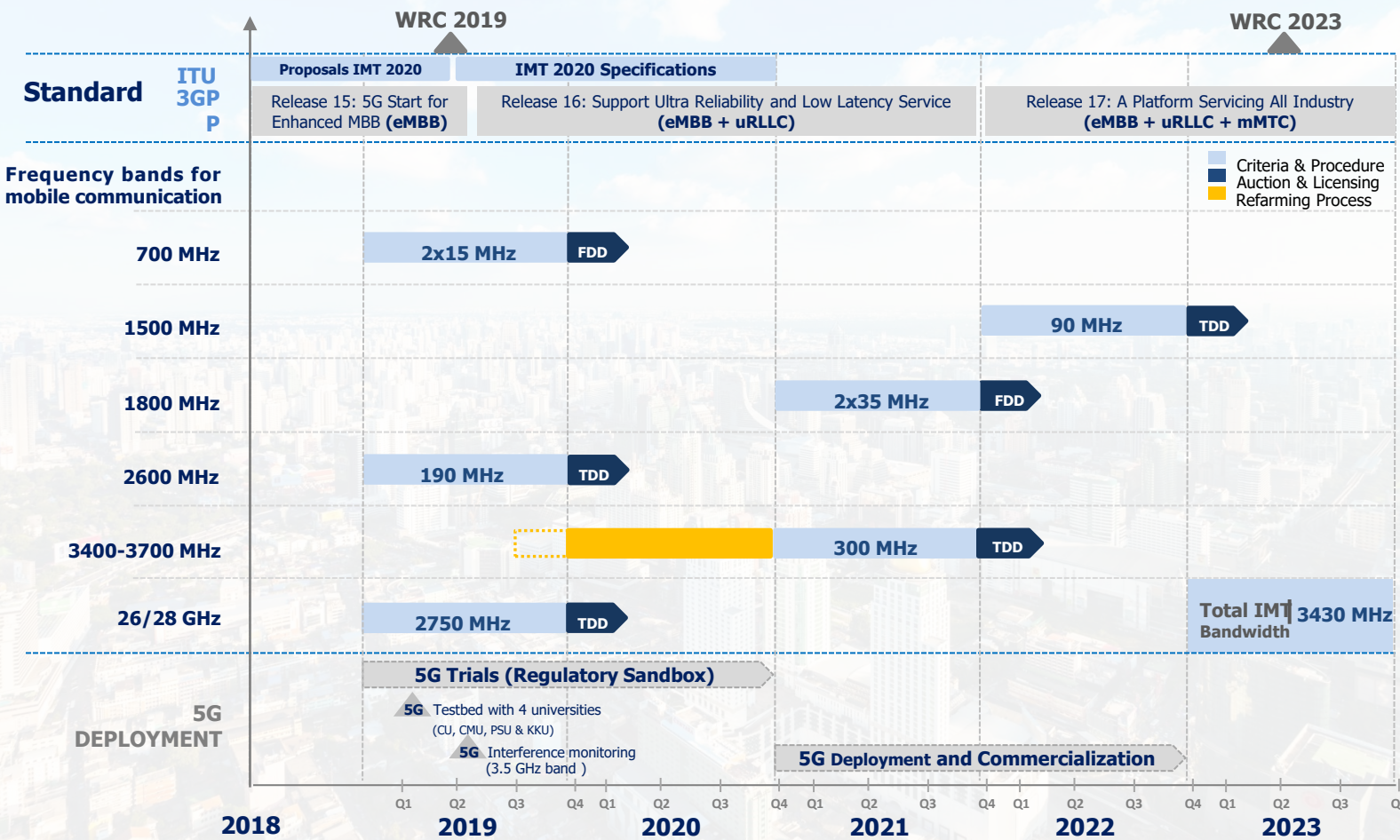
3.4 GHz : 0.3 GHz

* Some parts were allocated before NBTC establishment

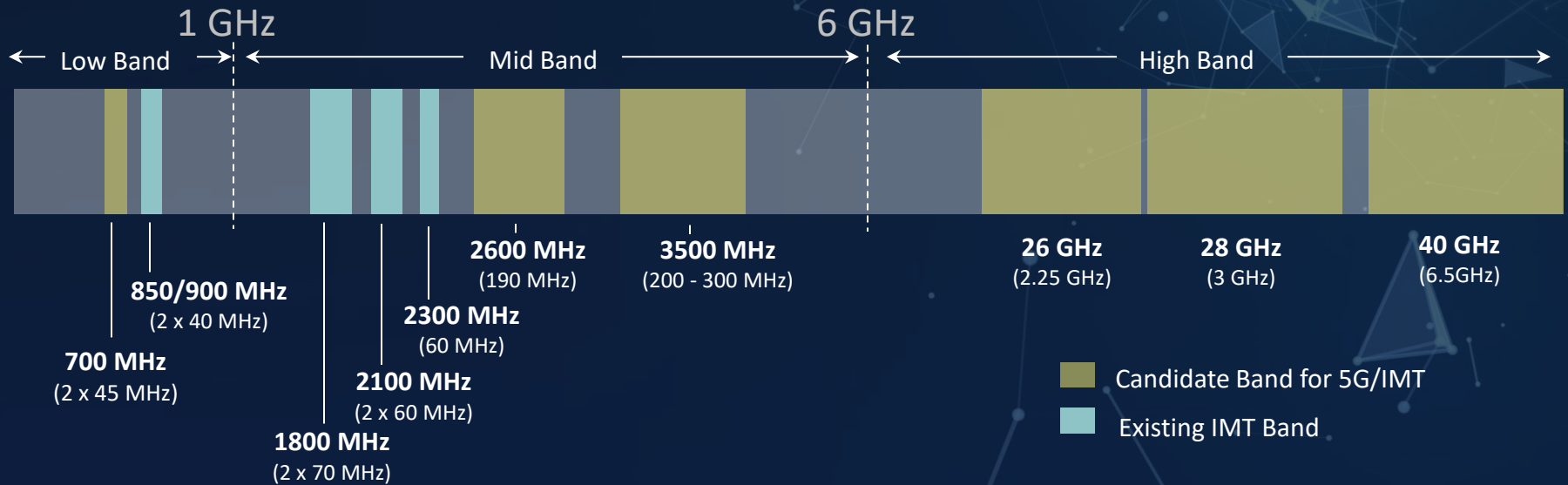
SPECTRUM ROADMAP 2023

FOR
IMT
Bands

IN
THAILAND



5G/IMT Spectrum in Thailand



Existing use C-Band

3.4 GHz

3.7 GHz

4.2 GHz



FSS

FACT :



The spectrum 3.4-4.2 GHz is currently used by
Fixed Satellite Service



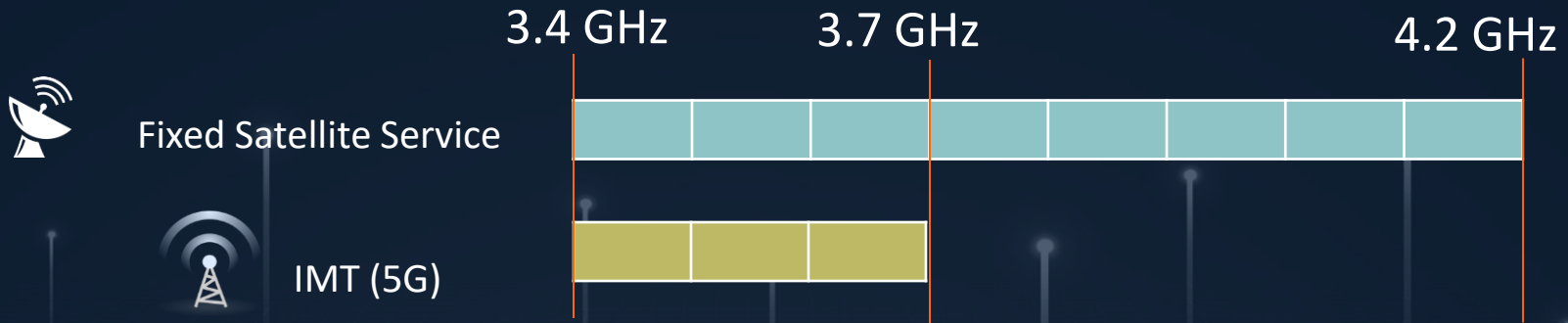
The majority of earth stations are TVRO.
Expected more than **10M** households



Mostly **Unknown** exact **locations**
(Only records for gateways and VSATs are available)

Field trial for Interference test

between IMT and FSS in 3.5 GHz



Objective : To find the following optimal parameters for sharing and compatibility

- 1 Separation distance between FSS and IMT stations
- 2 Possible guard band
- 3 Possible filter for interference mitigation

Field Trial Setting



Case 1: Sub-urban
Case 2: Urban



Satellite

Operating Frequencies: 3.4-4.2 GHz



TV Set



Spectrum Analyzer

Technical Parameters

- Separation Distance
- Guard band
- Applied Filter



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5G C-Band NR

Operating Frequencies: 3.4-3.7 GHz

Varied distance →

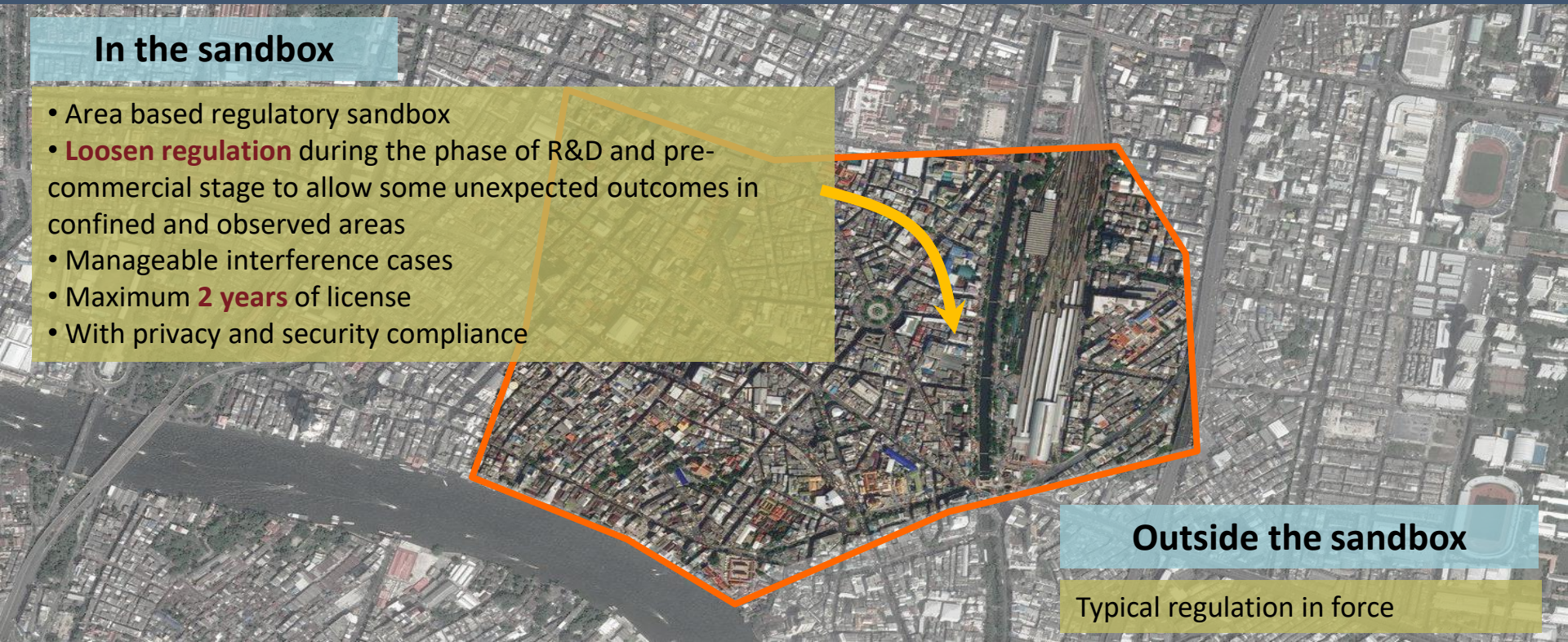
Concept of Regulatory Sandbox

In the sandbox

- Area based regulatory sandbox
- **Loosen regulation** during the phase of R&D and pre-commercial stage to allow some unexpected outcomes in confined and observed areas
- Manageable interference cases
- Maximum **2 years** of license
- With privacy and security compliance

Outside the sandbox

Typical regulation in force



Expected areas for sandbox



Spectrum Auction 2020

700 MHz

733	738	743	748
2x5 MHz	2x5 MHz	2x5 MHz	
788	793	798	803

3 lots

Nationwide

3 licenses

2.6 GHz

2500	2510	2685	2690
10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	

19 lots

Nationwide

19 licenses

26 GHz

24.3	24.4	26.9	27.0
100 MHz	100 MHz	100 MHz	100 MHz	100 MHz	

27 lots/cluster

18 clusters

468 licenses



1. Metropolitan of Central Region
2. Eastern Region 1
3. Upper Central Region
4. Southern region (Thai Gulf Coast)
5. Lower Central Region 2
6. Eastern Region 2
7. Lower Northeastern Region 1
8. Southern Region (Andaman Coast)
9. Lower Central Region 1
10. Central Northeastern Region
11. Upper North Region 1
12. Upper Northeastern region 1
13. Lower Northeastern Region 2
14. Southern Region (Border)
15. Upper North Region 2
16. Lower North Region 1
17. Lower North Region 2
18. Upper Northeastern Region 2



- Thank you -