글로벌 ICT 표준 컨퍼런스 2023

Global ICT Standards Conference 2023

(세션6) 차세대통신(B5G/6G): 디지털 세상의 혁신과 변화

IMT-2030 표준화 동향

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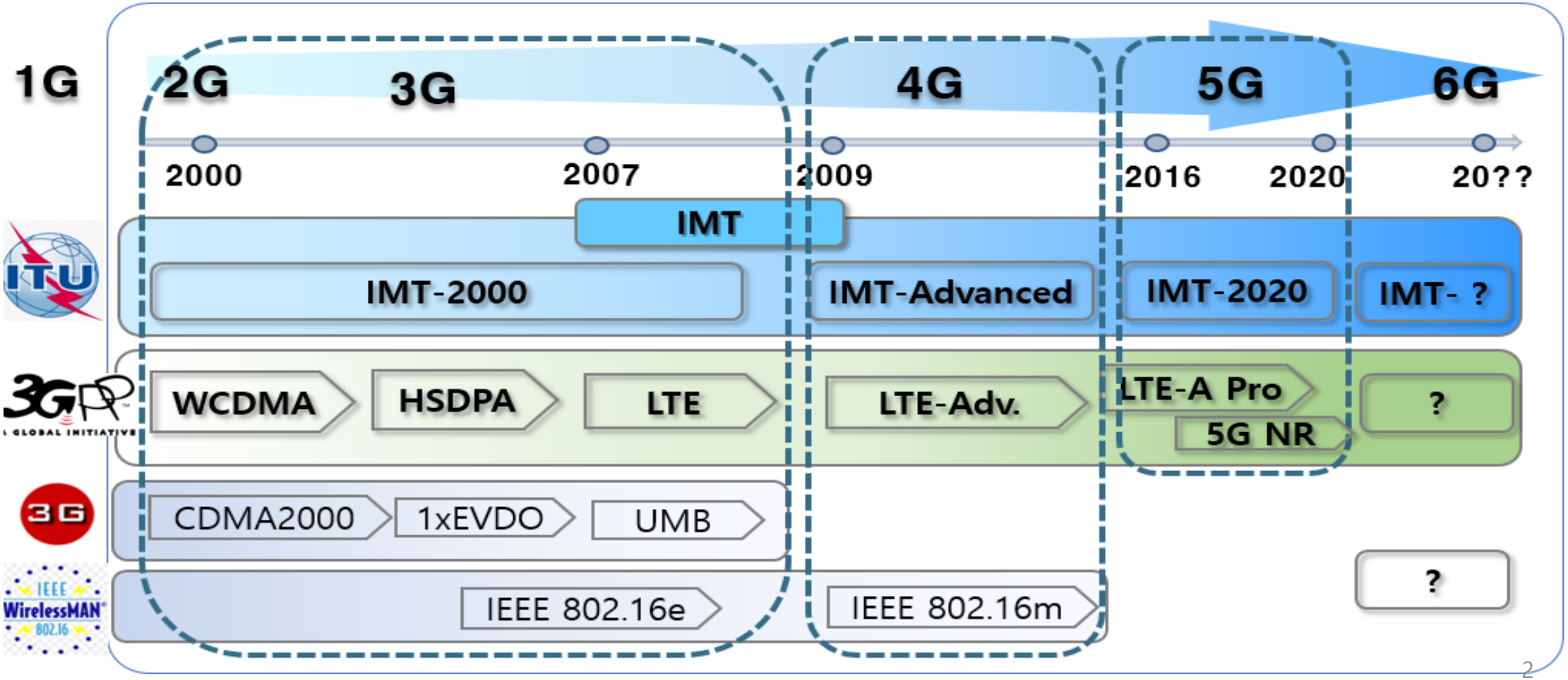
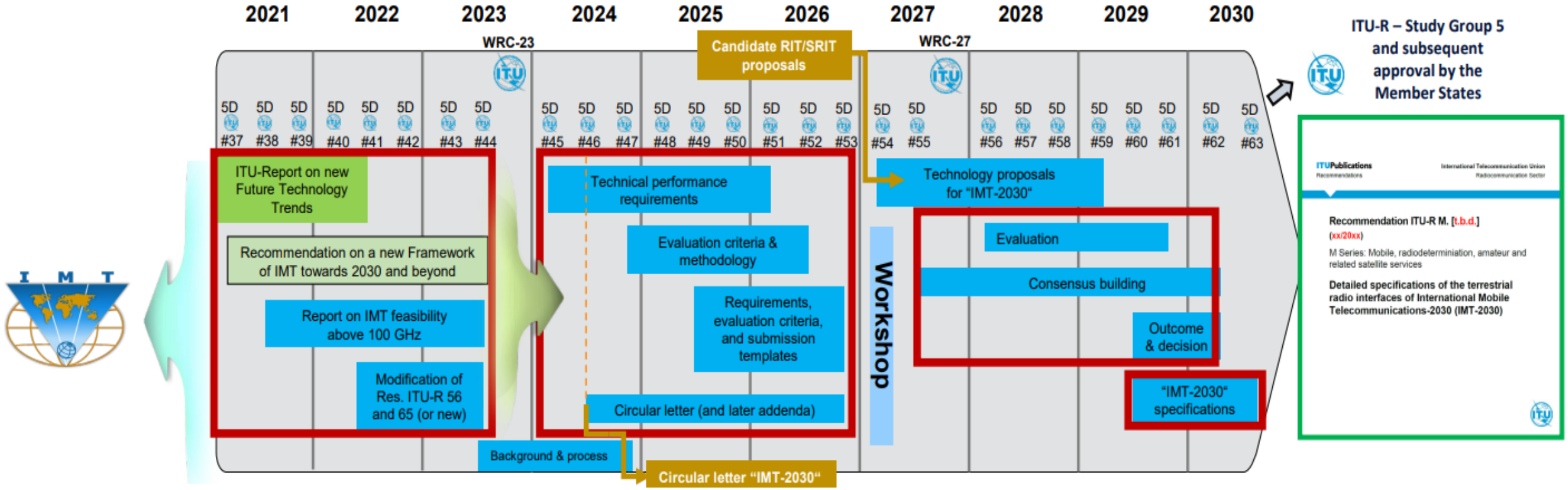
주관 국립전파연구원 National Radio Research Agency
TTA IITP KEA kista ETRI

Background : ITU Framework for IMT towards 6G



Background : UN SDGs

Timeline and Process of IMT-2030



Note 1: WP 5D #59 will additionally organize a workshop involving the Proponents and registered Independent Evaluation Groups (IEGs) to support the evaluation process

Note 2: While not expected to change, details may be adjusted if warranted. Content of deliverables to be defined by responsible WP 5D groups

Framework → **Requirements and Evaluation criteria** → **Evaluation and Consensus building** → **Specification** → **Approval**

Source : ITU web site

Structure of IMT-2030 Framework Rec.

Main body (Preamble)

Scope

Keywords

Abbreviations/Glossary

Related documents

The ITU Radiocommunication Assembly,

considering

recognizing

recommends

that the Annex should be considered as the framework and the overall objectives for the future development of IMT-2030.

Annex

Table of Contents

Why is IMT-2030 (6G) needed?
IMT-2030 expected benefits

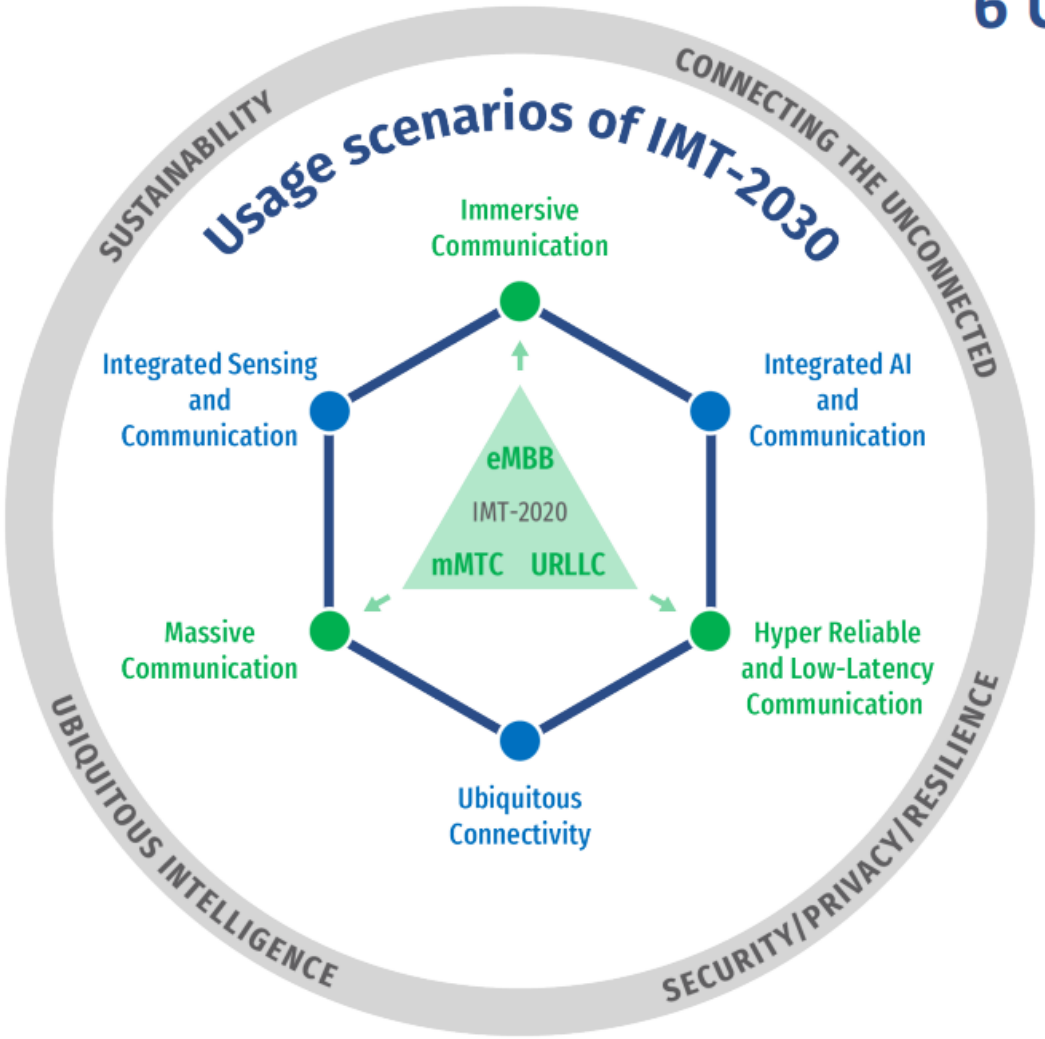
Trend and prospect of 6G features/technology/spectrum in around 2030

Guidance of 6G features

Guidance of 6G capabilities to fulfil usage scenarios

Relationship with existing IMTs and other access systems
Roadmap for technology/standardization/ deployment/spectrum

Source : ITU web site



So called "Wheel diagram"
Source: Document 5/131

6 Usage scenarios

Extension from IMT-2020 (5G)

- eMBB ➡ Immersive Communication
- mMTC ➡ Massive Communication
- URLLC ➡ HRLLC (Hyper Reliable & Low-Latency Communication)

New

- Ubiquitous Connectivity
- Integrated AI and Communication
- Integrated Sensing and Communication

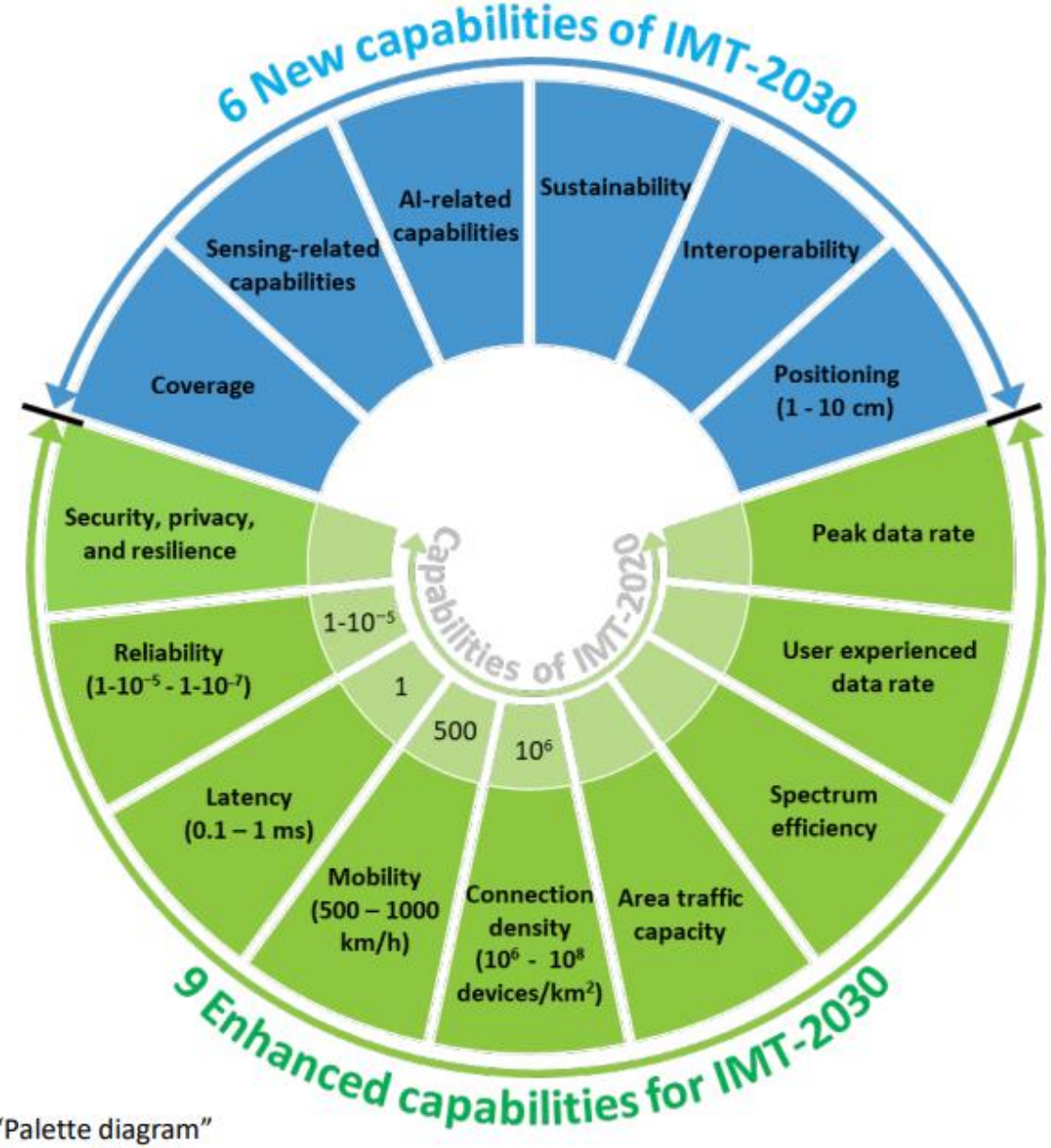
4 Overarching aspects:

act as design principles commonly applicable to all usage scenarios

Sustainability, Connecting the unconnected,
Ubiquitous intelligence, Security/privacy/resilience

Source : ITU web site

Capabilities of IMT-2030



So called "Palette diagram"
Source: Document 5/131

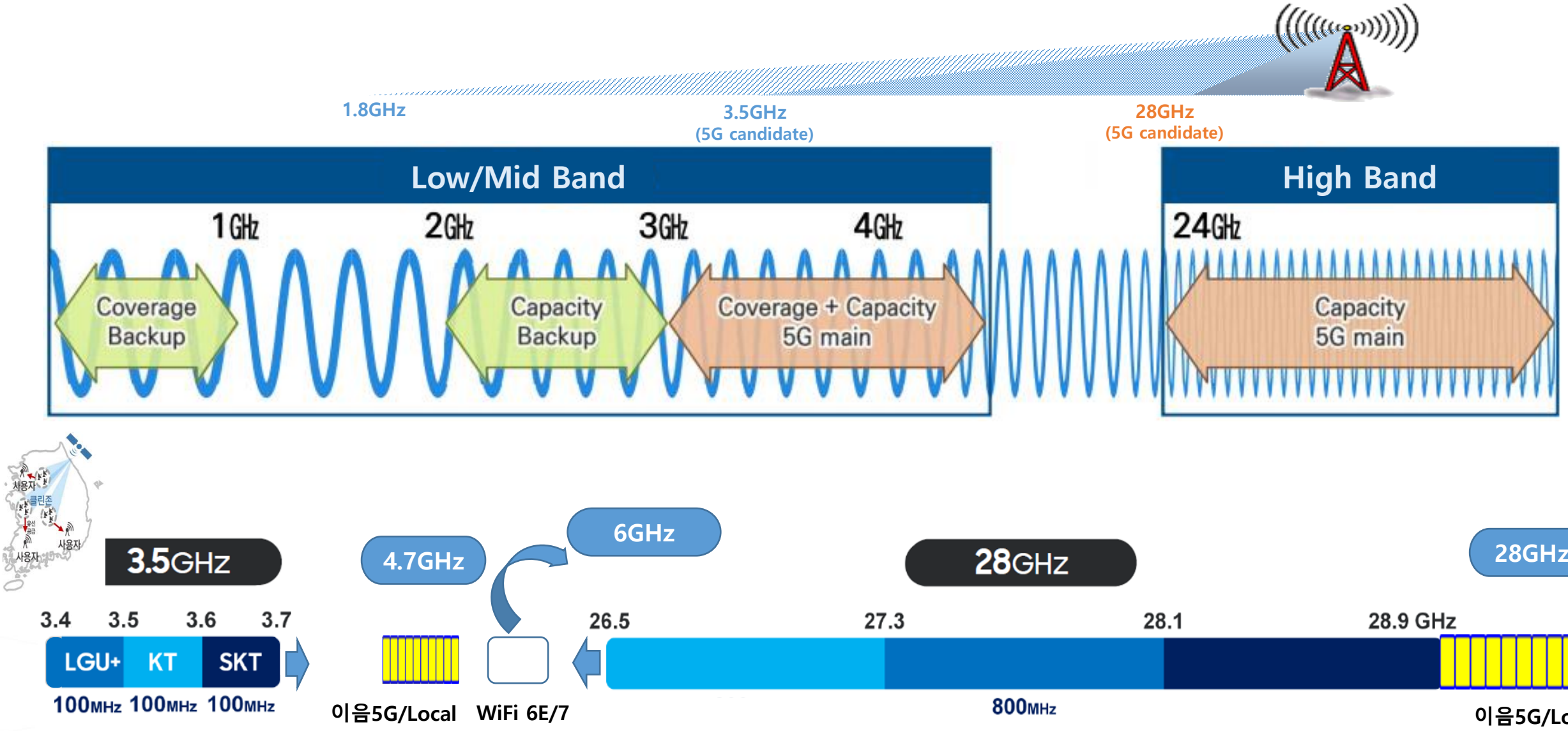
The range of values given for capabilities are estimated targets for research and investigation of IMT-2030.

All values in the range have equal priority in research and investigation.

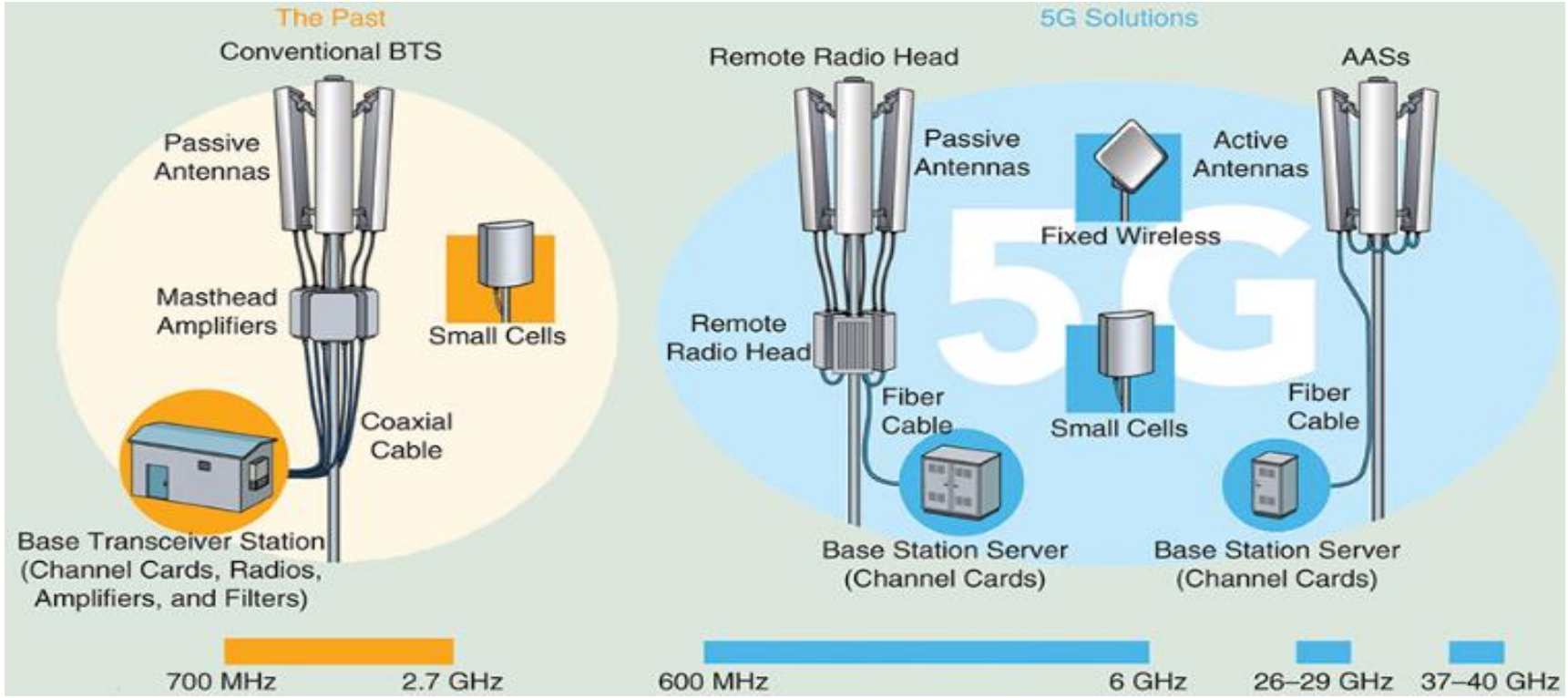
For each usage scenario, a single or multiple values within the range would be developed in future in other ITU-R Recommendations/Reports.

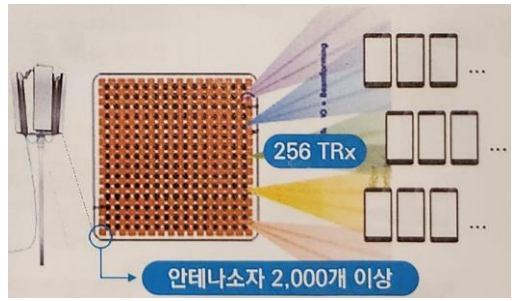
Source : ITU web site

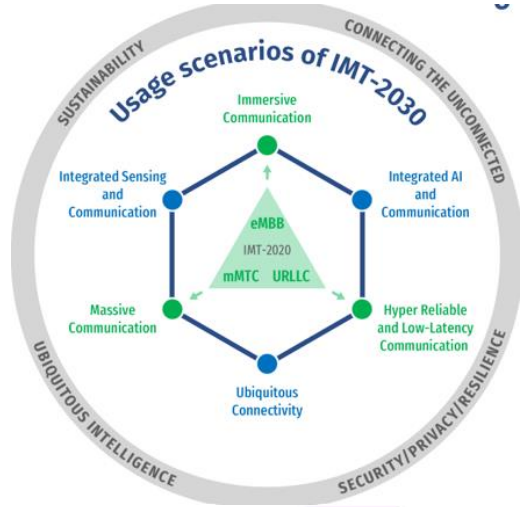
Trends of IMT Spectrum Usage in Korea

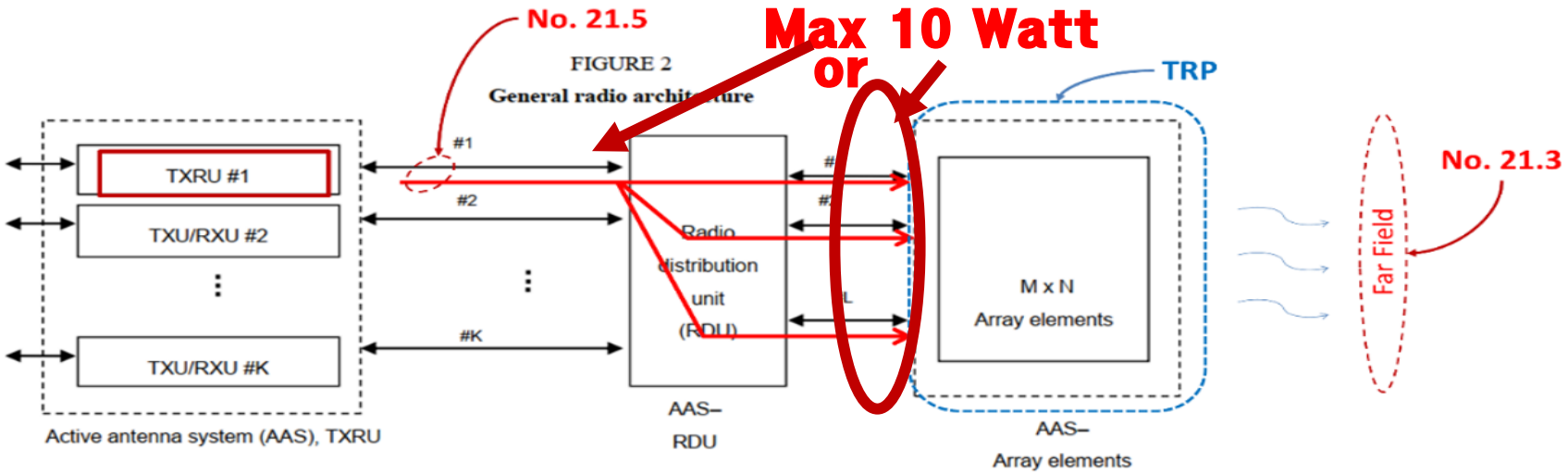


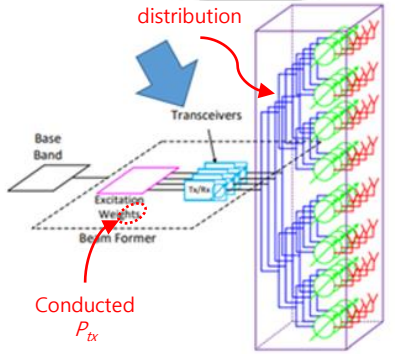
IMT Radio Regulation for AAS (RR No. 21.5)







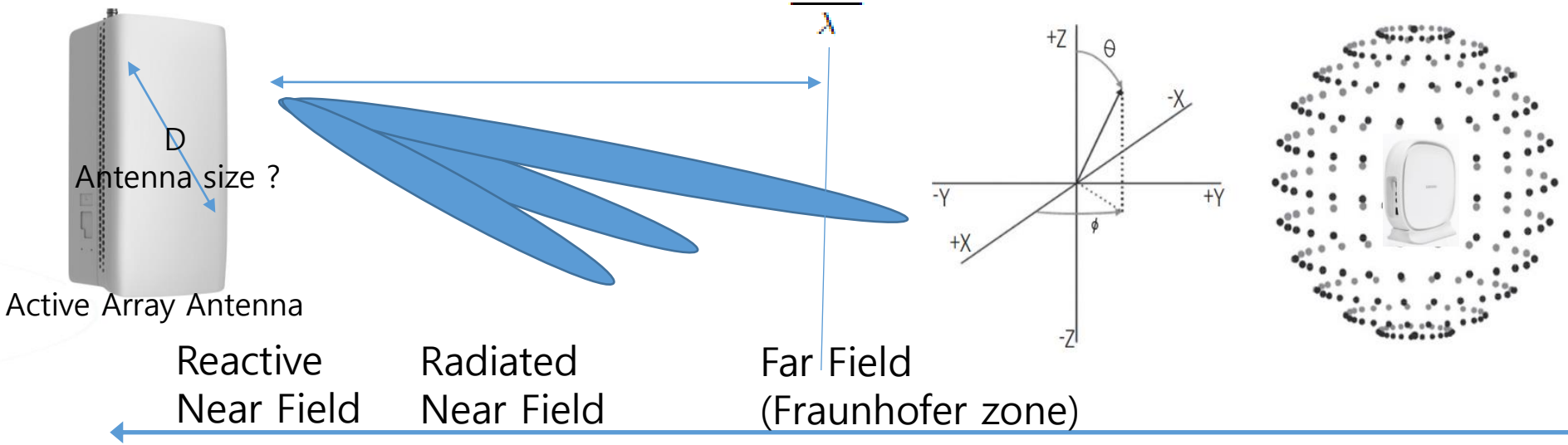




ITU-R 5D/844

~ 2.7GHz Freq.	3.3GHz ~, 26GHz ~ Freq.	Low/Mid/High Freq. ?
5/10/20/40MHz BW	50/100/200/400MHz BW	400~ MHz BW ?
1/2/4/8 Antenna	64/128/256/512 Antenna	512~ Antenna ?
Conducted Power	Total Radiated Power	Radiated Power ?
RU/DU	RU/DU/AU	AU ?
FDD	TDD	TDD, Full Duplex ?
		D2D, NTN

?



Topics on the WRC-23 agenda

WRC-23 agenda

Mobile

1.1 3.3 ≤ MS & IMT ≤ 10.5 GHz

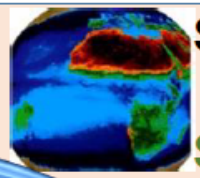
1.2 0.694 ≤ HIBS ≤ 2.7 GHz

Broadcasting

1.3 470 ≤ BS, MS ≤ 960 MHz

1.4 Spaceborne radar sounders (2ndary) EESS (active) @ 45 MHz

1.5 SRS @ 14.8-15.35 GHz



Science

1.12 Remote-sensing observation requirements - EESS (passive) @ 231.5-252 GHz

1.13

1.14

1.6 Sub-orbital vehicles

Aviation

1.7 New AMS(R)S VHF alloc.

1.8 UAS CNPC links via FSS

1.9 Dig. techno. for aviation safety-of-life applications (App.27)

1.10 New AMS alloc. (around 15.5 & 22 GHz) for non-safety applications

Maritime

1.11 GMDSS modernization and e-navigation

1.15 A-ESIM & M-ESIM (GSO Ku-FSS)

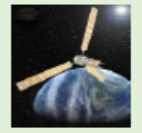
1.16 ESIM (NGSO Ka-FSS)

Satellite

1.17 ISS / Sat.-to-Sat. links

1.18 NB MSS for IoT (L/S-bands)

1.19 Ka-FSS (s-E) (R2)



Satellite regulatory issues *7*

Note: The WRC-23 agenda item numbers are indicated in italic (agenda items 2, 3, 4, 5, 6, 8, 9 (9.1, 9.2, 9.3) and 10 are not mentioned here).

► 19 specific and 11 standing items, see Res. 811 (WRC-19)

감사합니다.

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