

Shaping 6G – Technology & Services



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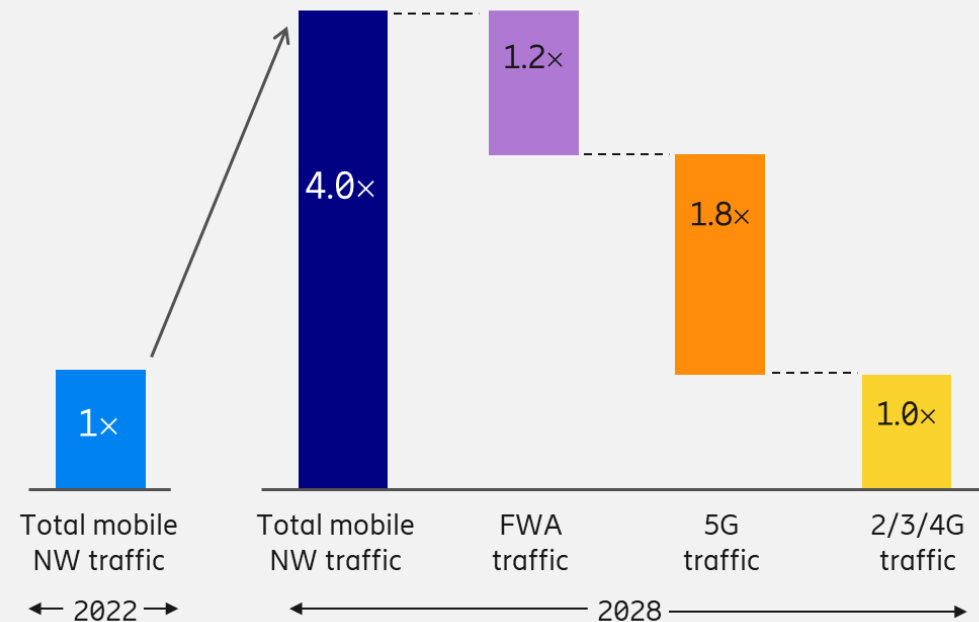
Fast pick-up of 5G, more demands to come

First years of 5G

>1B
5G sub's
<15% of total

>35%
pop coverage
 $\frac{2}{3}$ to go

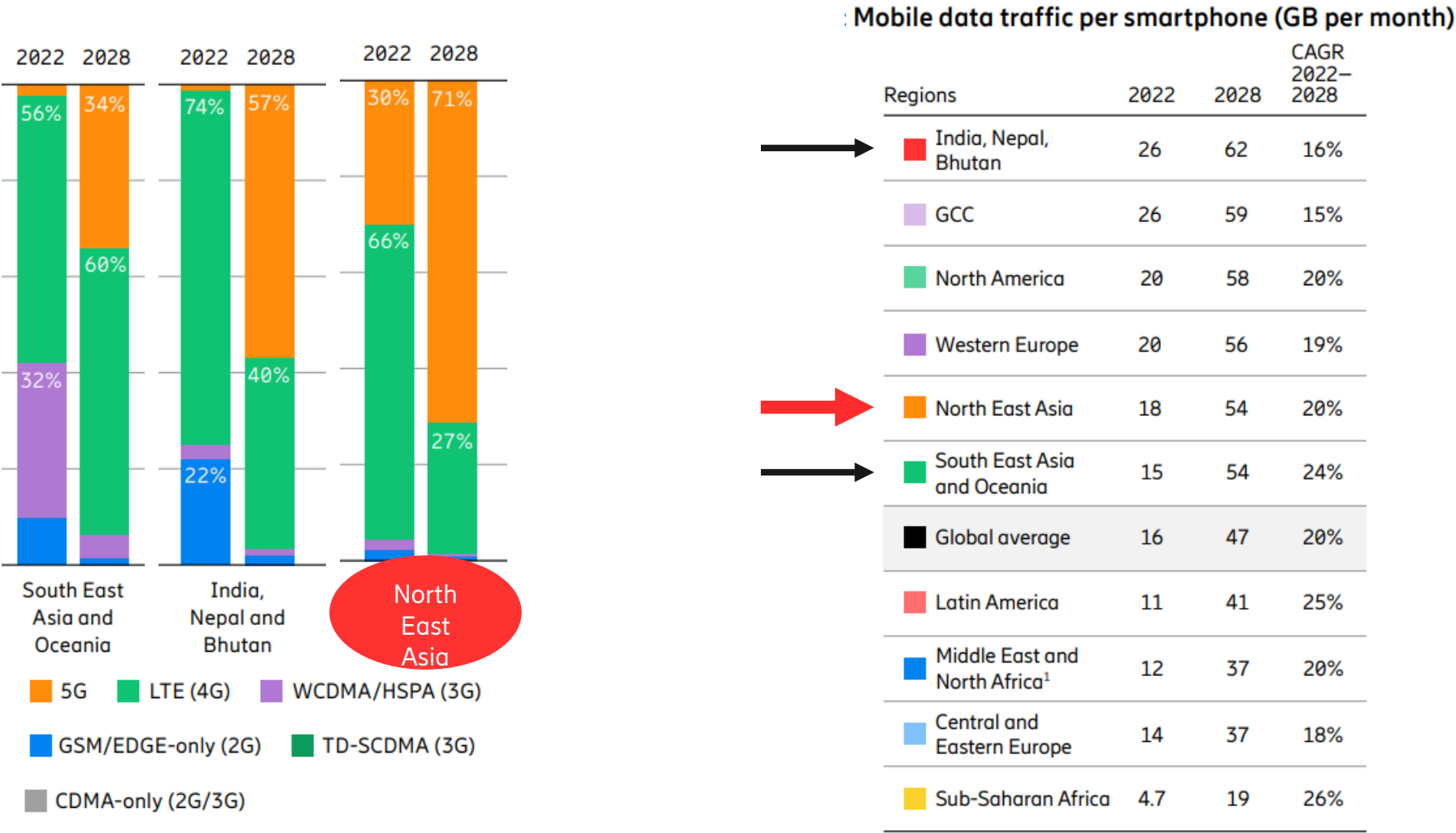
Global mobile NW traffic in 2028 relative to 2022



Source: Ericsson Mobility Report (Jun. '23)

5G mobile subscription to reach 1.5B in 2023 – 5G to surpass 4G in 2027


5G subscriptions rising – North East Asia focus





Communications and network APIs drive innovation




Communications APIs



Messaging



Voice


Video

Network APIs


Authentication


QoS


Location

APIs empower developers, simplify application creation, and optimize performance



High speed & Low latency



Reliability



Wireless edge solutions



Security

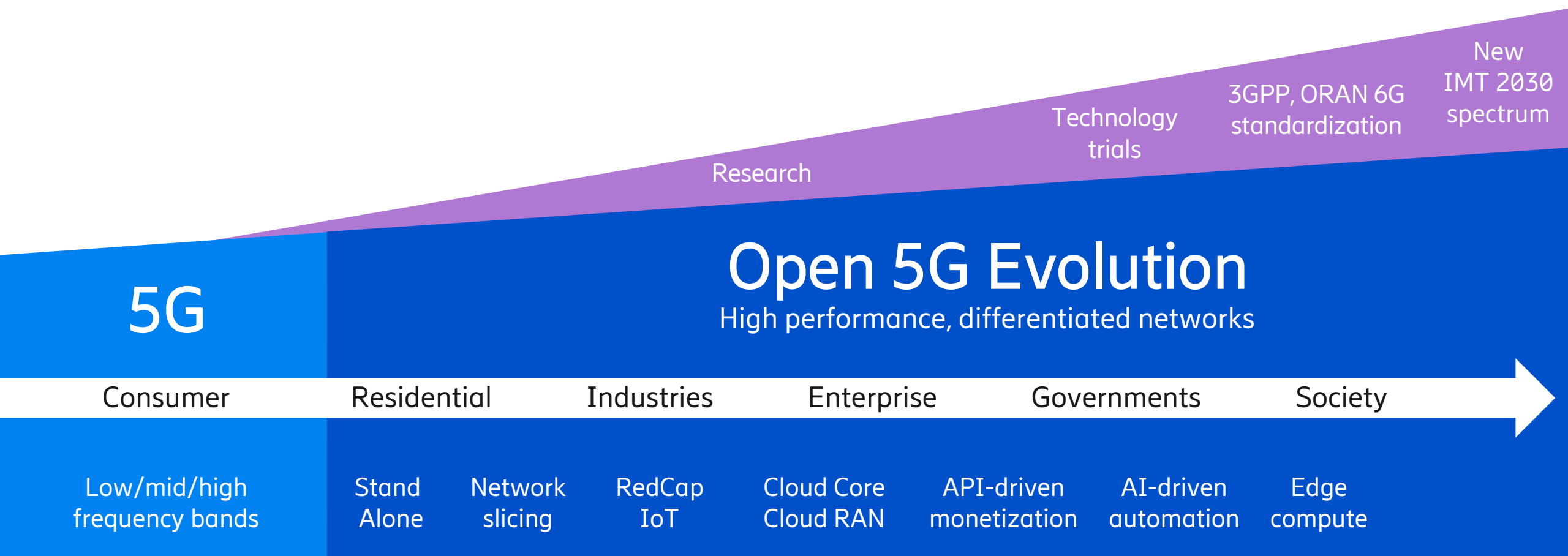


Network slicing

Worldwide 4G and 5G networks

Long-term network evolution – for new needs

Continuous mobile innovation in hardware, software and automation



Networks will evolve with software capabilities for future services long into next decade

6G initiatives



Global (Organizations)

- NGMN*
- GSA*
- ITU-R*
- O-RAN nGRG*
- 6GIG* (kick-off in October)

USA (Organizations)

- ATIS Next G Alliance*
- NSF RINGS(*)
- More...

Europe (italic = new in 2023)

- Flagship projects
 - Hexa-X *
 - *Hexa-X II**
 - 6G-ANNA*
- Component projects - EU
 - REINDEER*, 6G TERAOM*, 6G TANDEM*, DESIRE6G*, FLEX-SCALE*, TrialsNet*, 5GCOMPAD*, 6G-NTN*, 6G Sky*, Deterministic6G*
- 6G-IA*
- Societal Needs and Value Creation SG* in 6G-IA (sub-group within the Vision and Societal Challenges WG)
- 6G Genesis* (Finland)
- One6G association
- 6G Platform* (BMBF program, Germany)
- KOMSENS-6G*, 6G-MASSIMO*, 6G TERAOM*, 6G LIKRIS*
- TUDOR*, REASON* (UK)
- KTH Digital Futures* (Sweden)

India

- 5GIF (5G India Forum)
- Bharat 6G Alliance

China

- IMT-2030 promotion group (driven by MIIT)*
- National key project – 6G part* (MOST)
- Future forum: 6GANA*

Japan

- B5G consortium* (MIC)
- Innovative Optical & wireless network forum (IOWN)*

Korea

- 6G R&D strategy (Ministry of Science and ICT)
- 5G Forum

6G focus areas

Communication beyond 5G & Further enhanced MBB

Immersive communication – expanding on eMBB



Merged
reality

Critical communication – expanding on URLLC

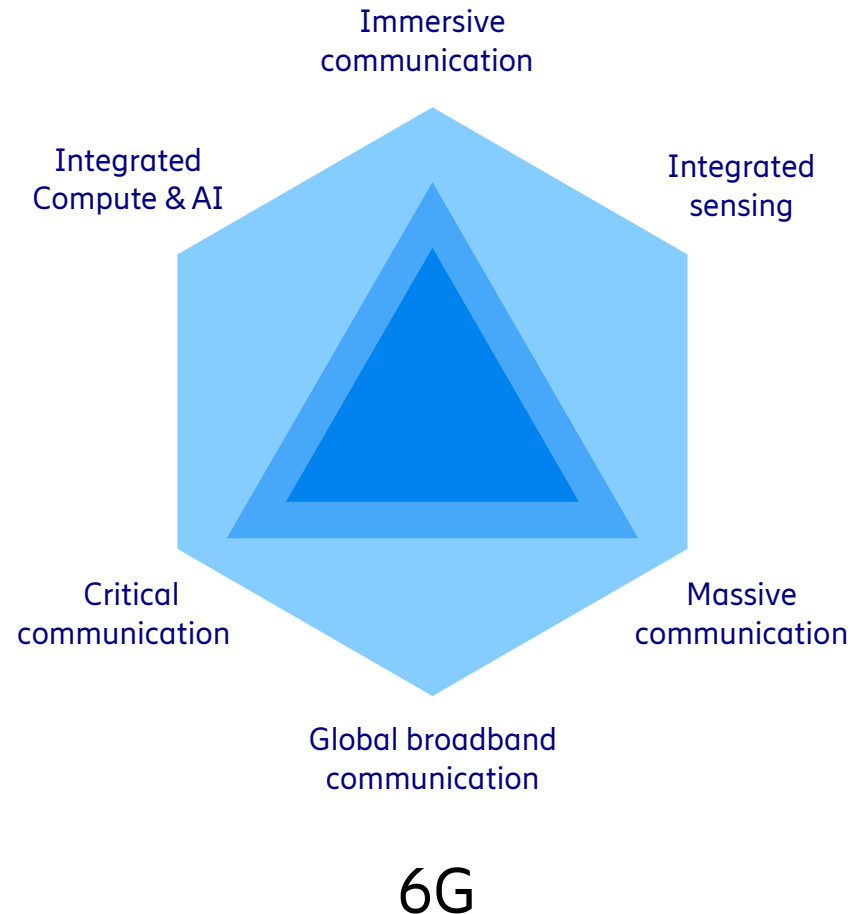


Situational
awareness

Massive communication— expanding on mMTC

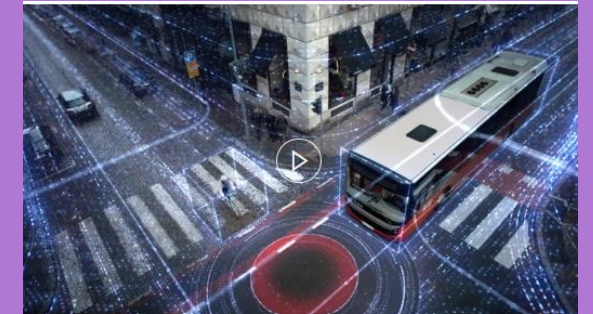


Massive
twinning



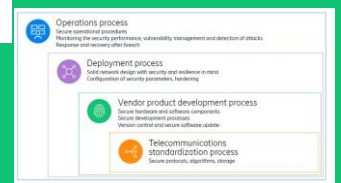
Beyond-communication networks

New services on 6G platform



Sustainable and trustworthy networks

Sustainability and trust imperatives



Imagine a seamless reality



2030 – connecting a cyber-physical world based on 6G



Human and society needs



The Internet of Senses



Digitalized and programmable world



Connected intelligent machines



Connected sustainable world

Digital reality



Physical reality

Cyber-physical world enablement (examples)

Sensing

Cyber-physical mapping and analysis

Preventive action

6G network platform



Limitless connectivity



Trustworthy systems

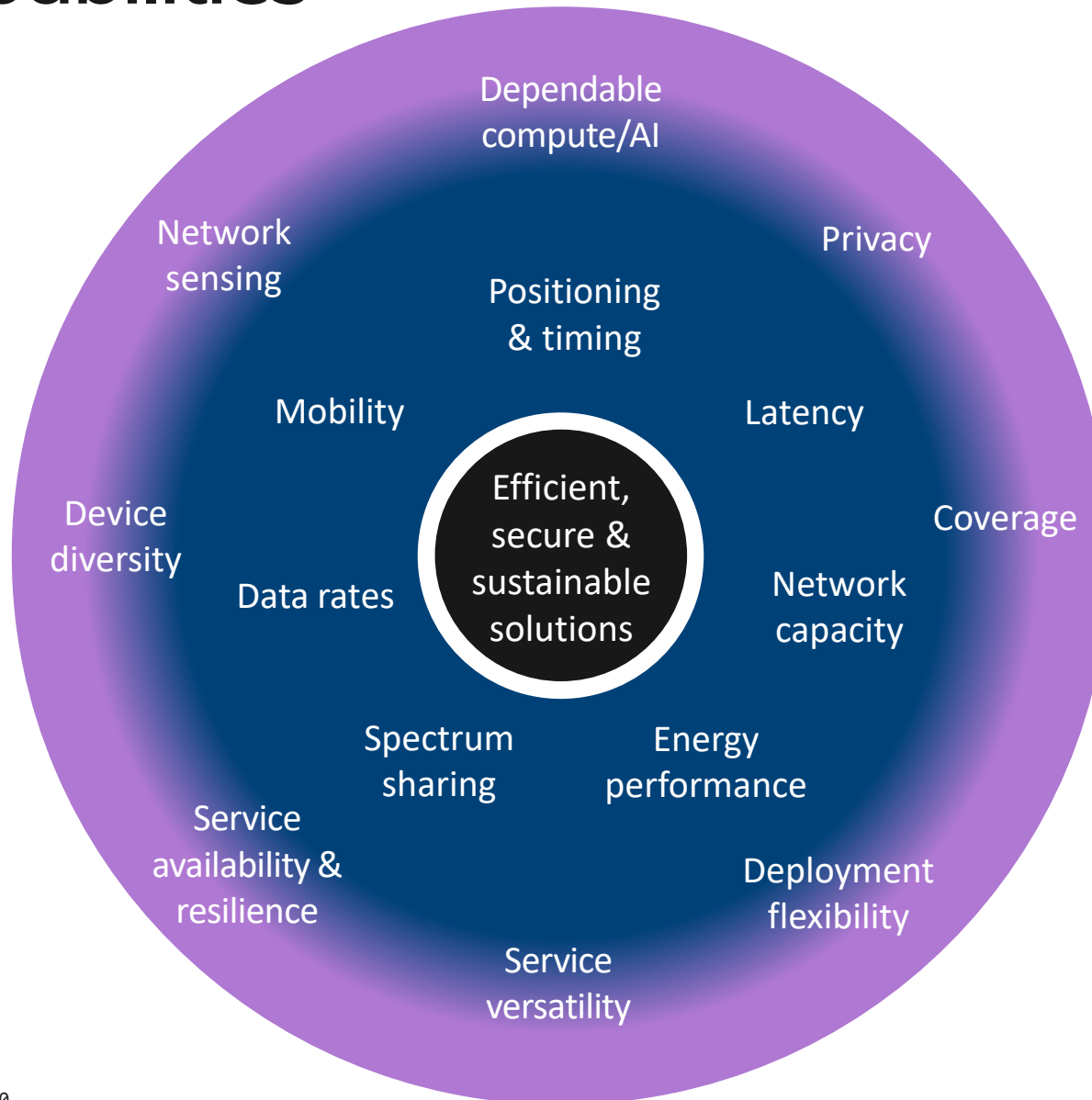


Cognitive network



Network compute fabric

6G Capabilities

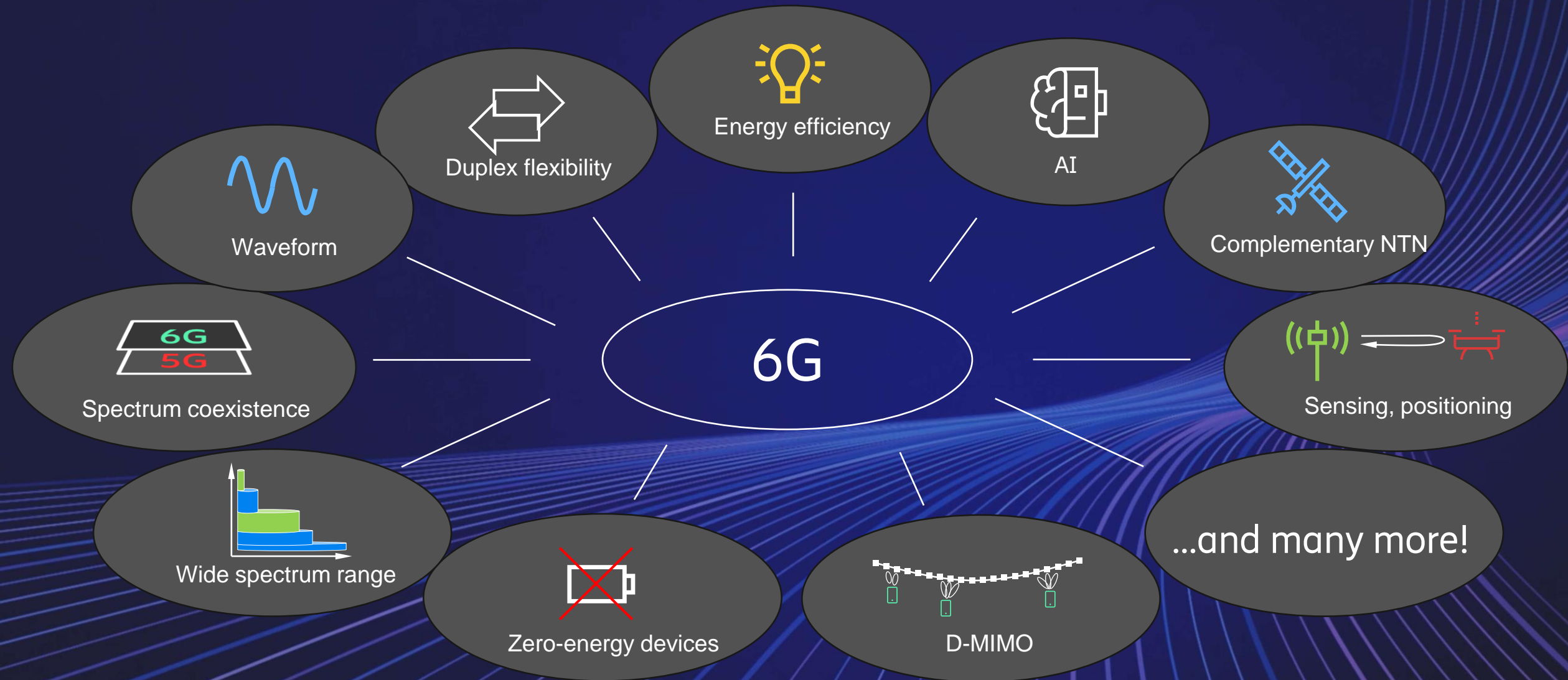


Beyond-communication networks

Communication beyond MBB
Further enhanced MBB

Efficient network operation

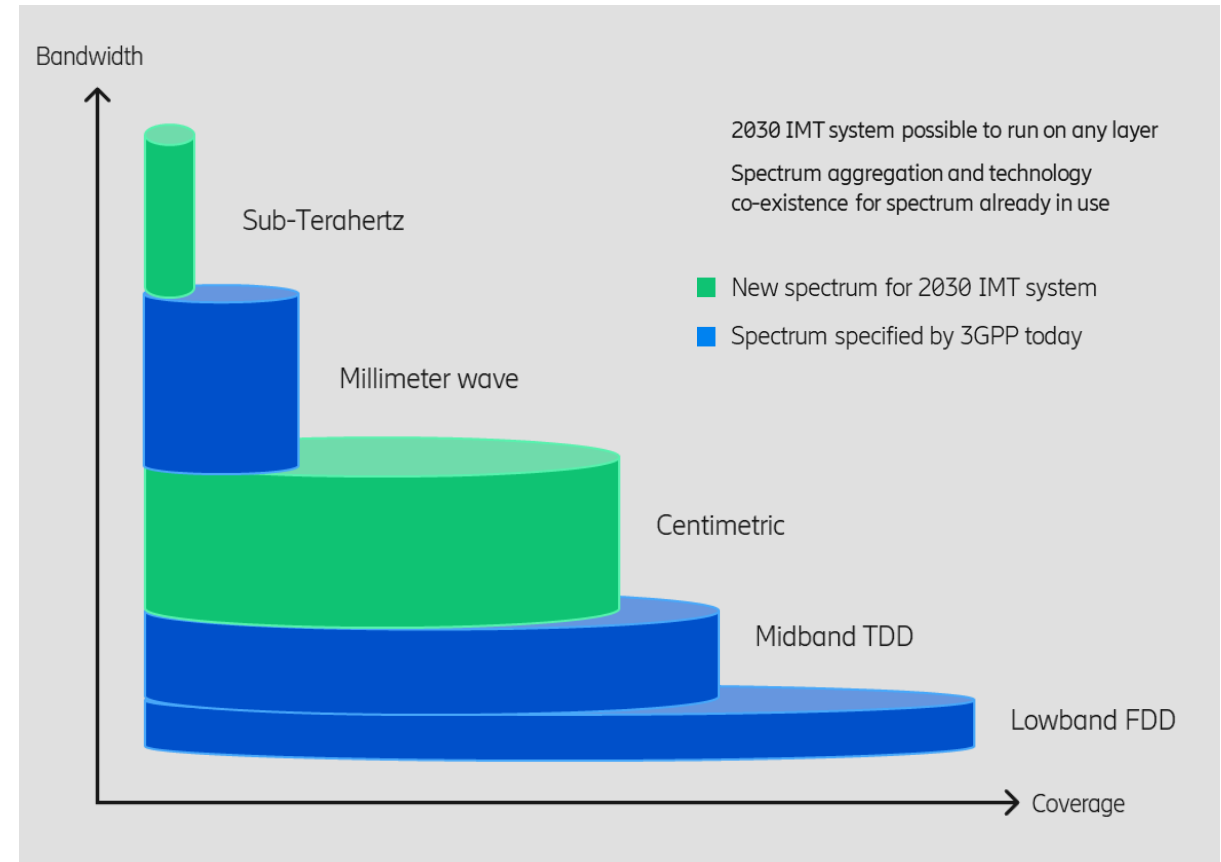
Some technologies that will get us to 6G



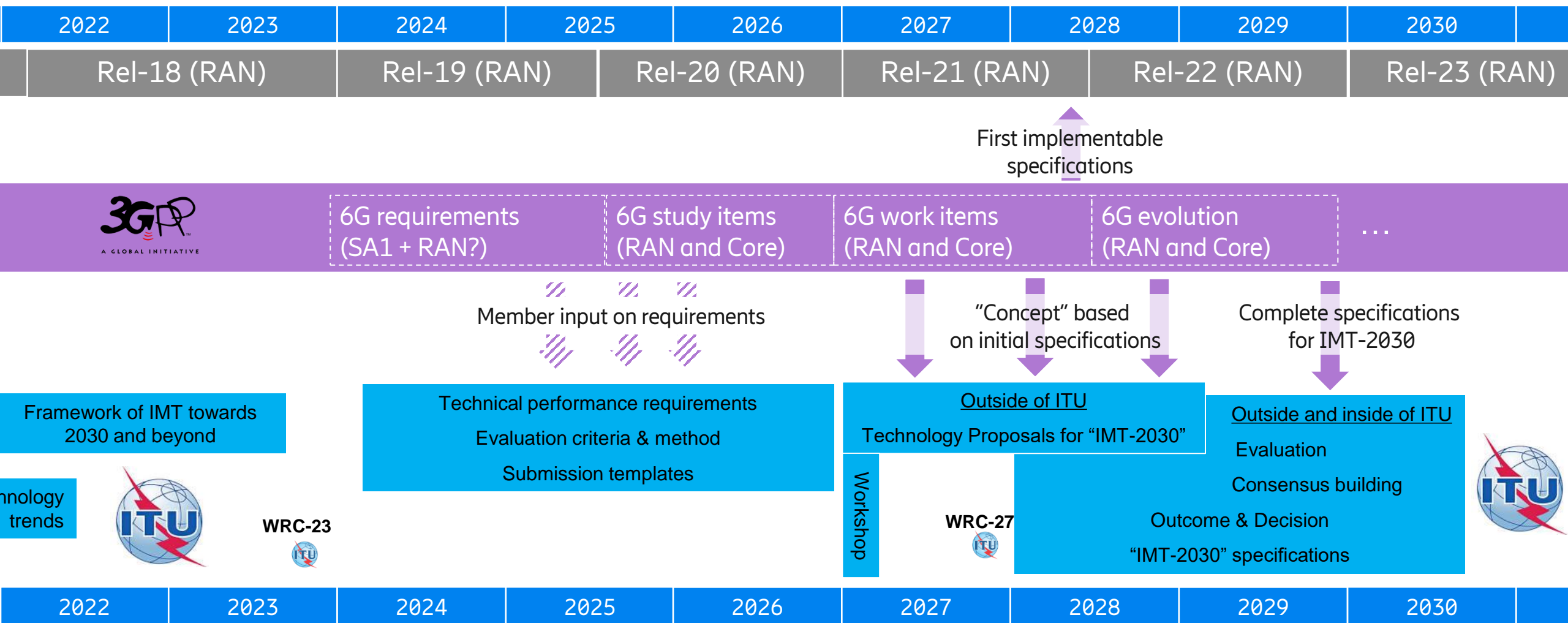
Key 6G Principles



- 6G shall operate in all 3GPP bands
- 6G Spectrum sharing shall be supported
- Open 6G interfaces for a healthy eco system
- 6G RAN shall have a standalone architecture
- Reuse of investment, smoother 6G introduction



Joint ITU-R and 3GPP timeline



6G Timeline – Ericsson View



High-level 6G timeline

