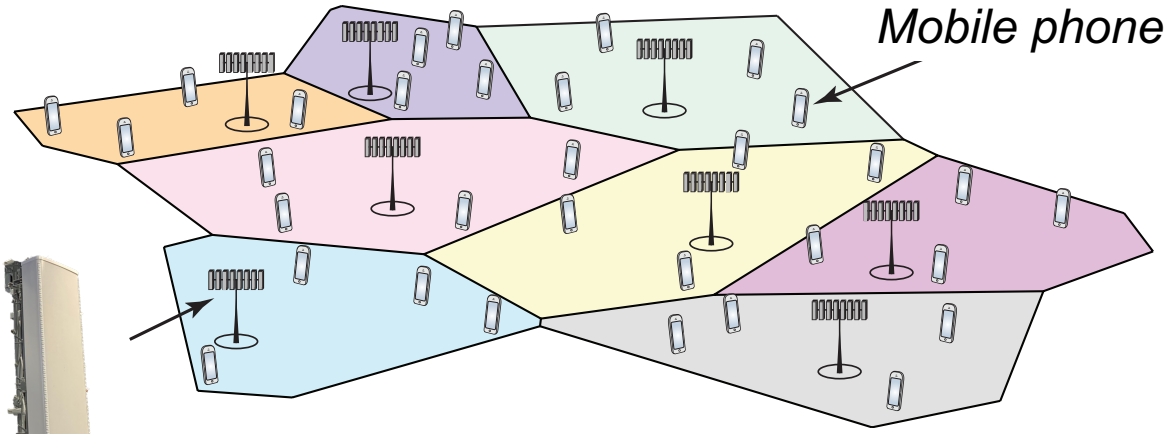

6G: What, why, and how?

Cellular networks



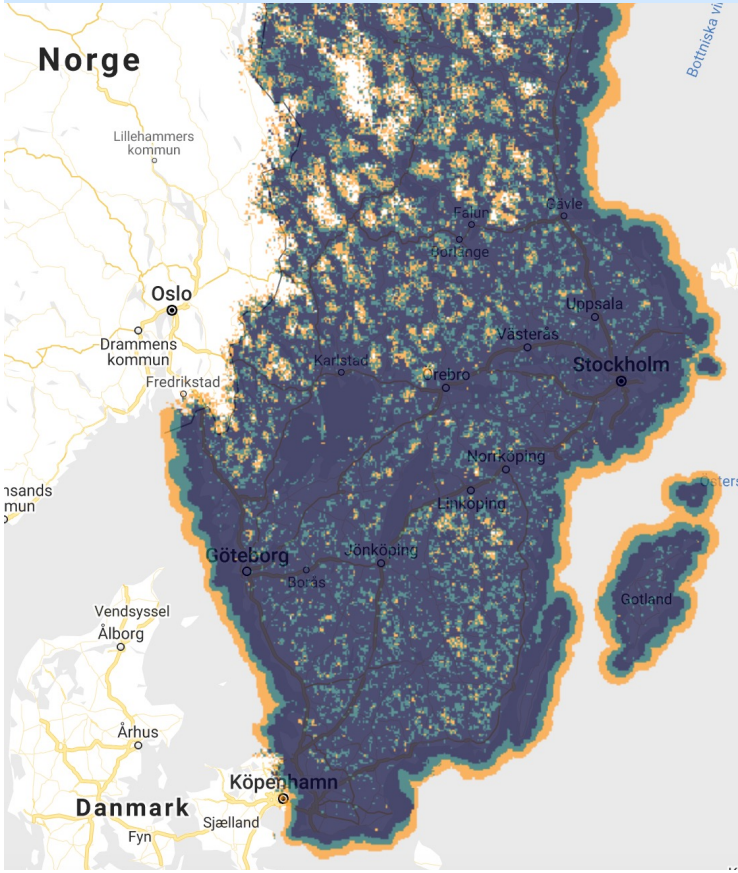
Base station

Performance:

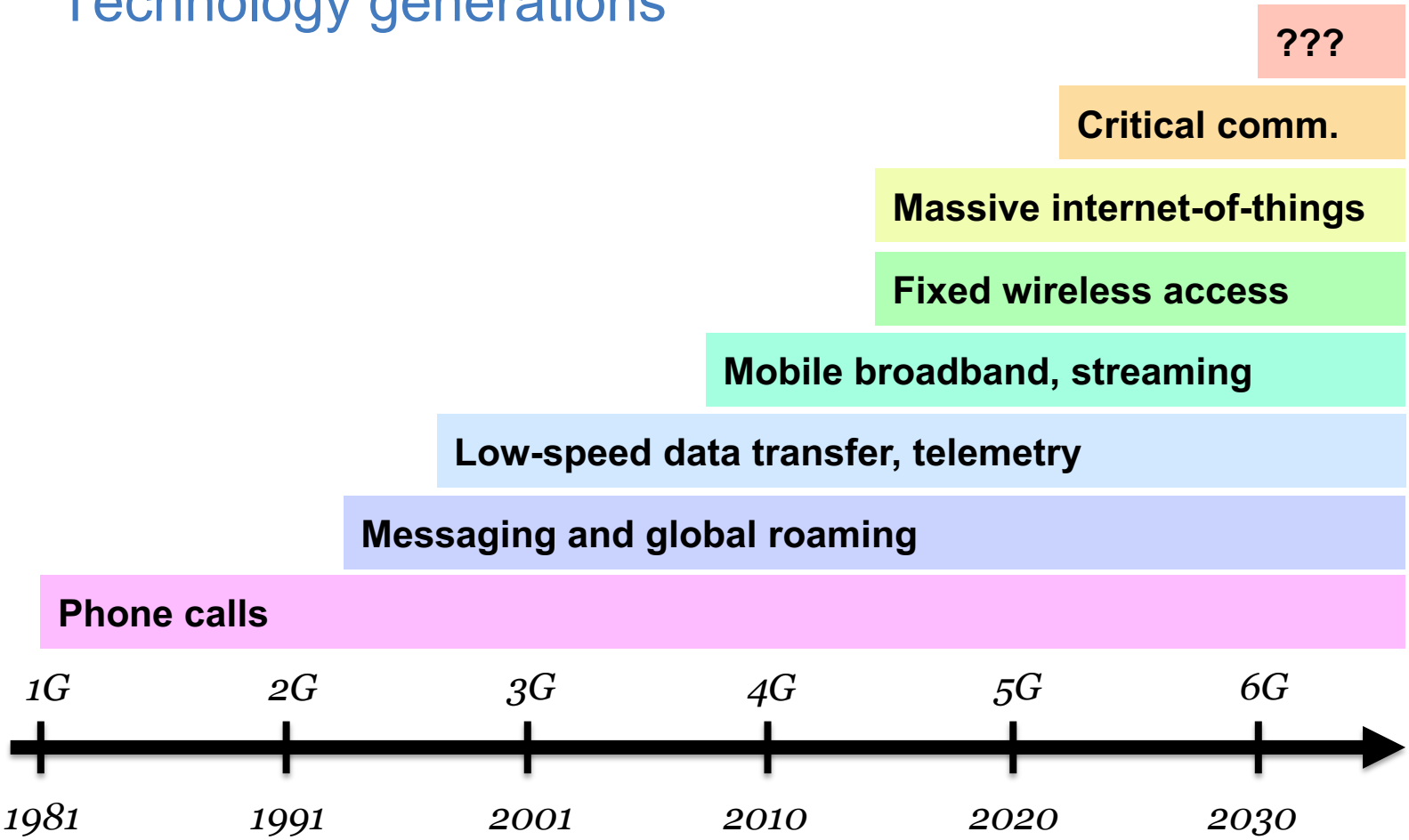
bits per second,
latency, etc.

Coverage:

Where devices “reach” base stations



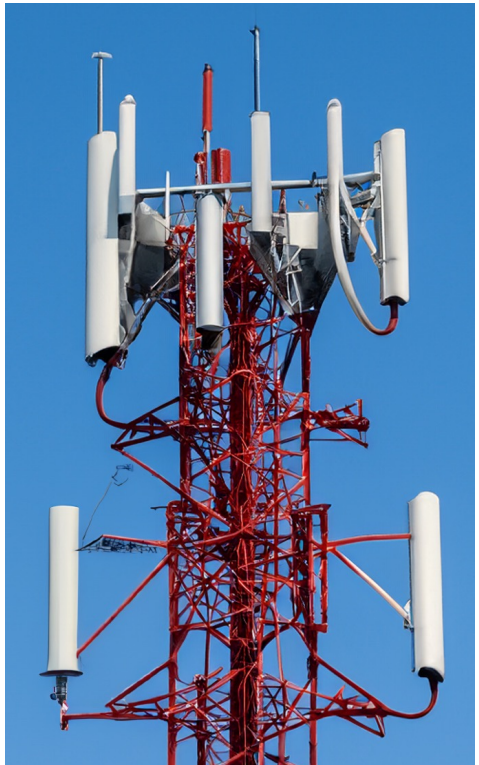
Technology generations



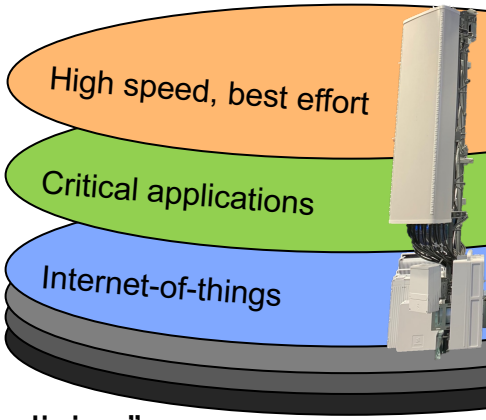
Network Evolution

One network per application

One network for all applications



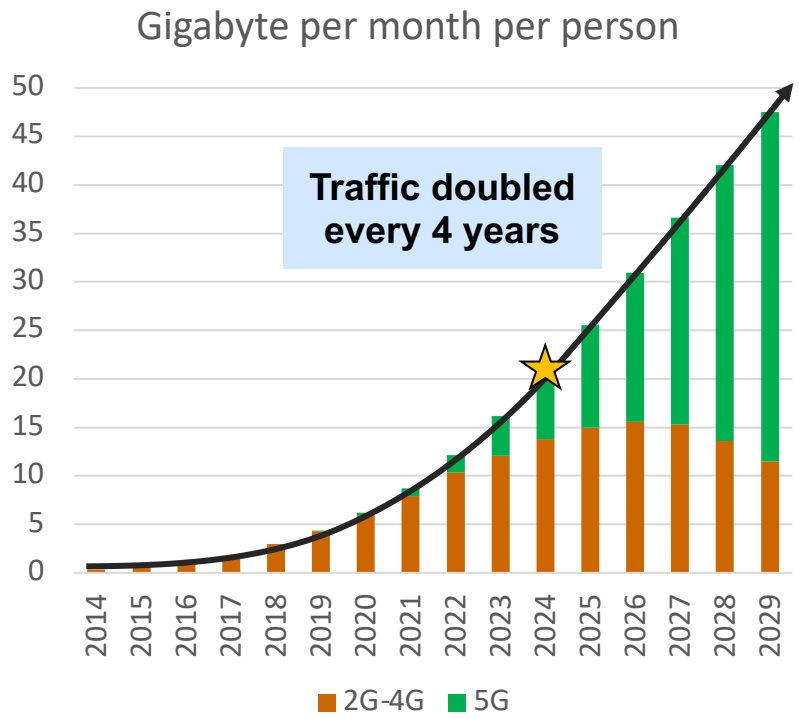
One physical network, virtual networks for different applications



“Network slicing”

Why 6G?

Traffic demand



Ericsson Mobility Report, 2024

New applications

(Enhanced current applications)

1. Industrial and societal automation
2. Brain-computer interfaces
3. Self-driving vehicles
4. Artificial intelligence
5. Global coverage
6. Extended reality
7. Radar sensing

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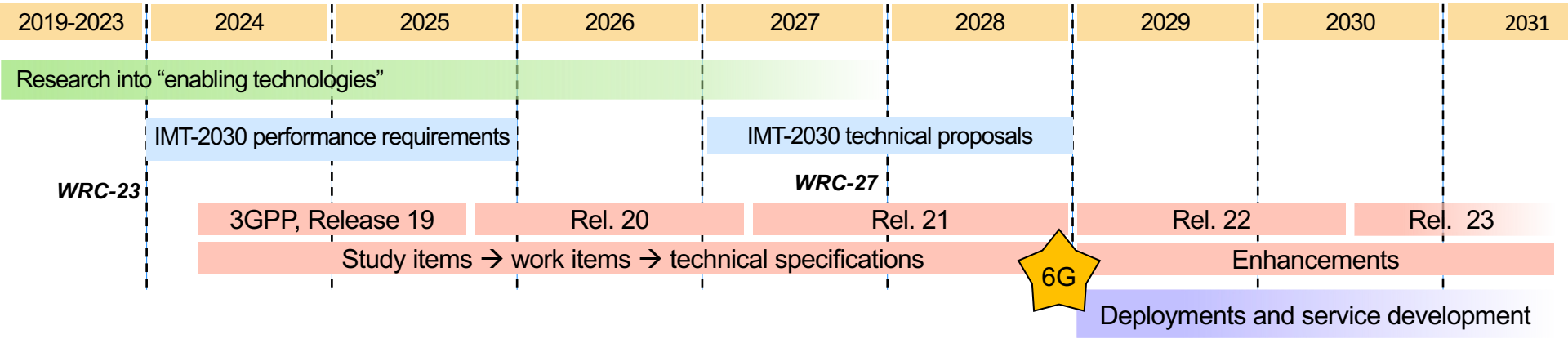
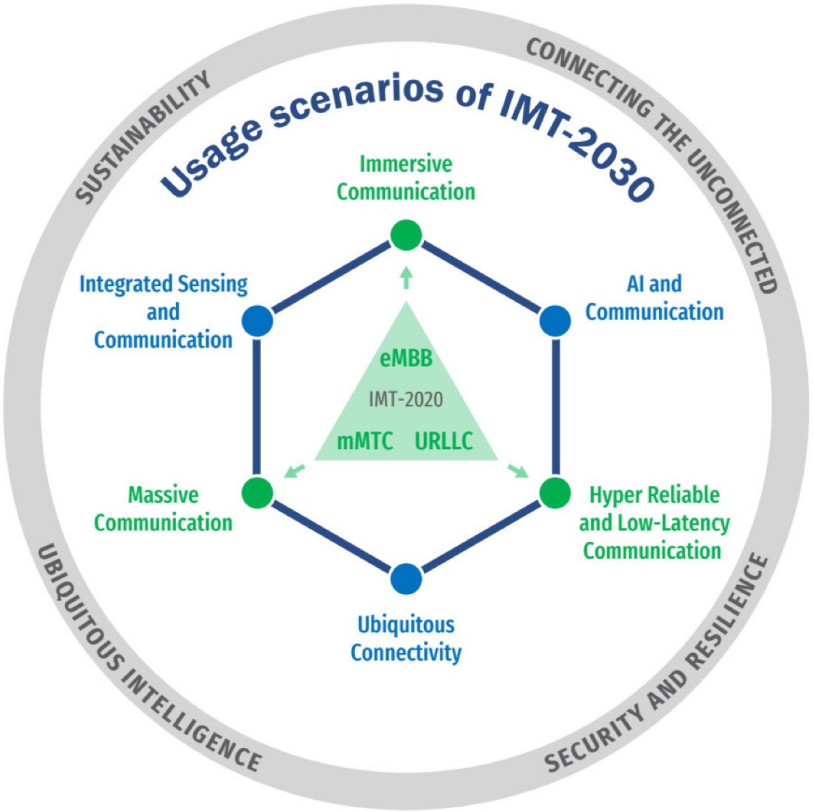
Key Players in 6G Development

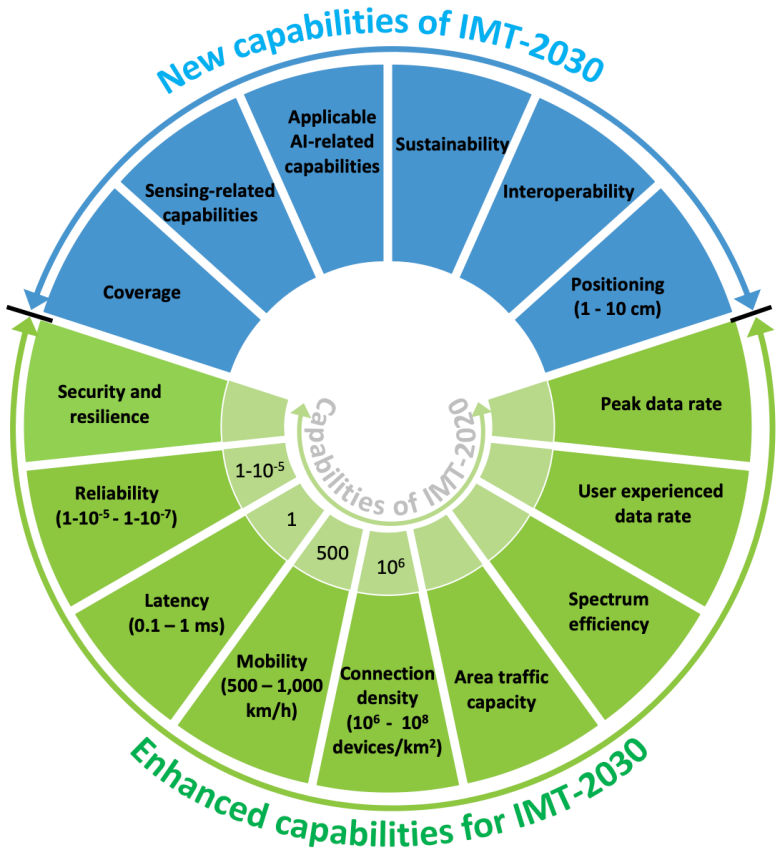
1. Requirements: ITU (International telecommunication union), stakeholders
2. Specifications: 3GPP (3rd Generation Partnership Project)
3. Technology component: Global research community



IMT = International Mobile Telecommunications
WRC = World Radiocommunication Conference

IMT-2030 Scenarios and Requirements





eMBB = Enhanced mobile broadband

5G: mMTC = Massive machine-type communications

URLLC = Ultra-reliable low latency communications

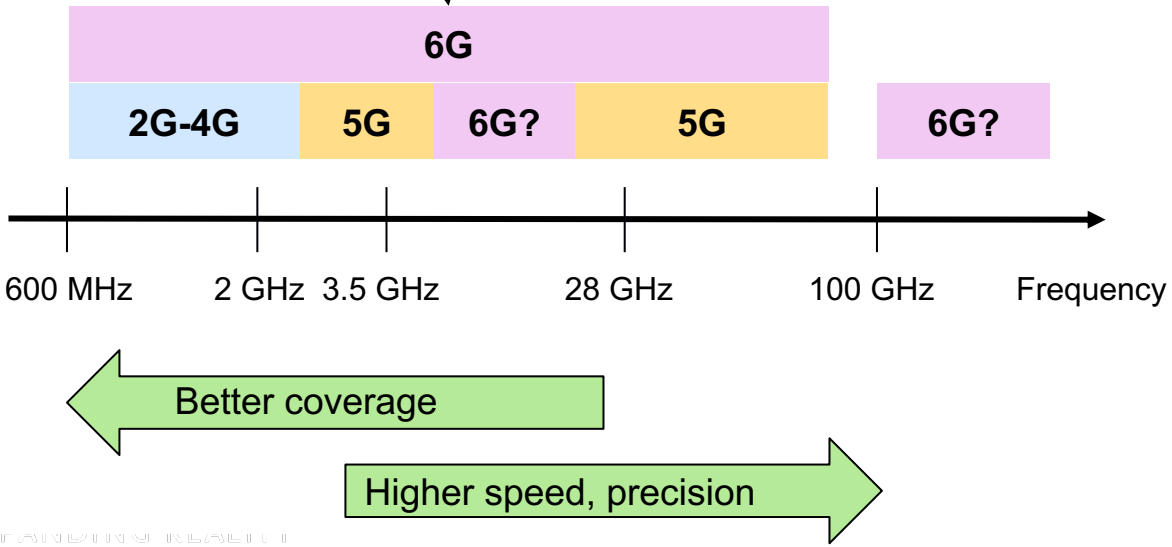
6G Spectrum

WRC-23 candidates:

- 4.4-4.8 GHz
- 7.1-8.4 GHz
- 14.8-15.35 GHz

Golden band

Good coverage, higher speeds



6G will be

- Many different things
- One network for all applications in the next decade