

Visions for Future Communications Summit 2021



Special Session on International views

Thoughts on Standardization and 6G

Dr. Ulrich Dropmann

5G-Advanced

Technology Sovereignty

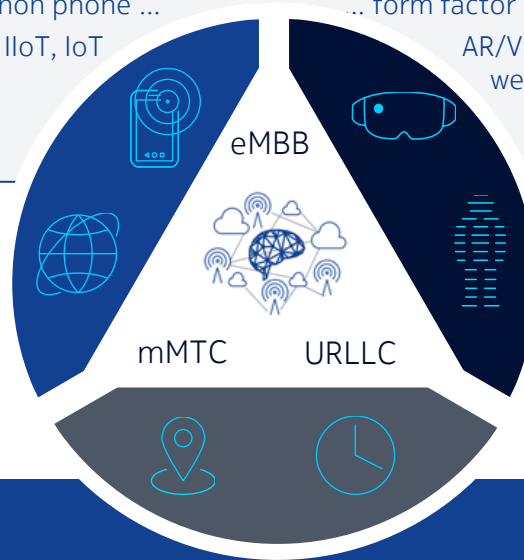
Enforced GOV security regulations, disaggregation with open ltf. and the introduction of alternative suppliers and new entrants.



Device revolution beyond smartphone

New non phone ... form factor devices
NTN, IIoT, IoT

AR/VR/XR ... wearables



Carbon-neutral networks

Driven by government requirements and global sustainability agendas to accelerate e.g. energy efficiency and carbon neutrality.



Services Monetization

Triggered by new business models, ecosystem alliances and verticals to generate additional values for existing and new players enabling new marketplaces.



Network Modernization

Enabled by technology advances, increased network capacity demand, new services, security requirements, new frequencies and cloud and domain/entity softwarization



Experience + Expansion + Extension + Excellence

Wide area

Higher capacity, data rates
AI/ML, Extreme mMIMO

High outdoor reliability
Wider bandwidth carriers

Integrate Non-terrestrial networks
Spectrum / RAN sharing

AI/ML
Energy efficiency

Capability discovery
Automation

Automated software verification
New privacy techniques, Mesh

Dynamic Digital Worlds

Remote Control

Global coverage

Zero touch Automation

Heterogenous cloud
Architecture simplification
and specialization

Trustworthy, Resilient
Systems

Campus

Dynamic Digital Worlds

High efficiency URLLC
sub ms, more nines

Zero energy devices

Network as a sensor

Heterogenous cloud
Architecture simplification
and specialization

Trustworthy, Resilient
Systems

Higher capacity, data rates
Wider bandwidth, AI/ML

Communication and control co-design
Radio aware Digital Twin

Backscatter communications
Energy harvesting

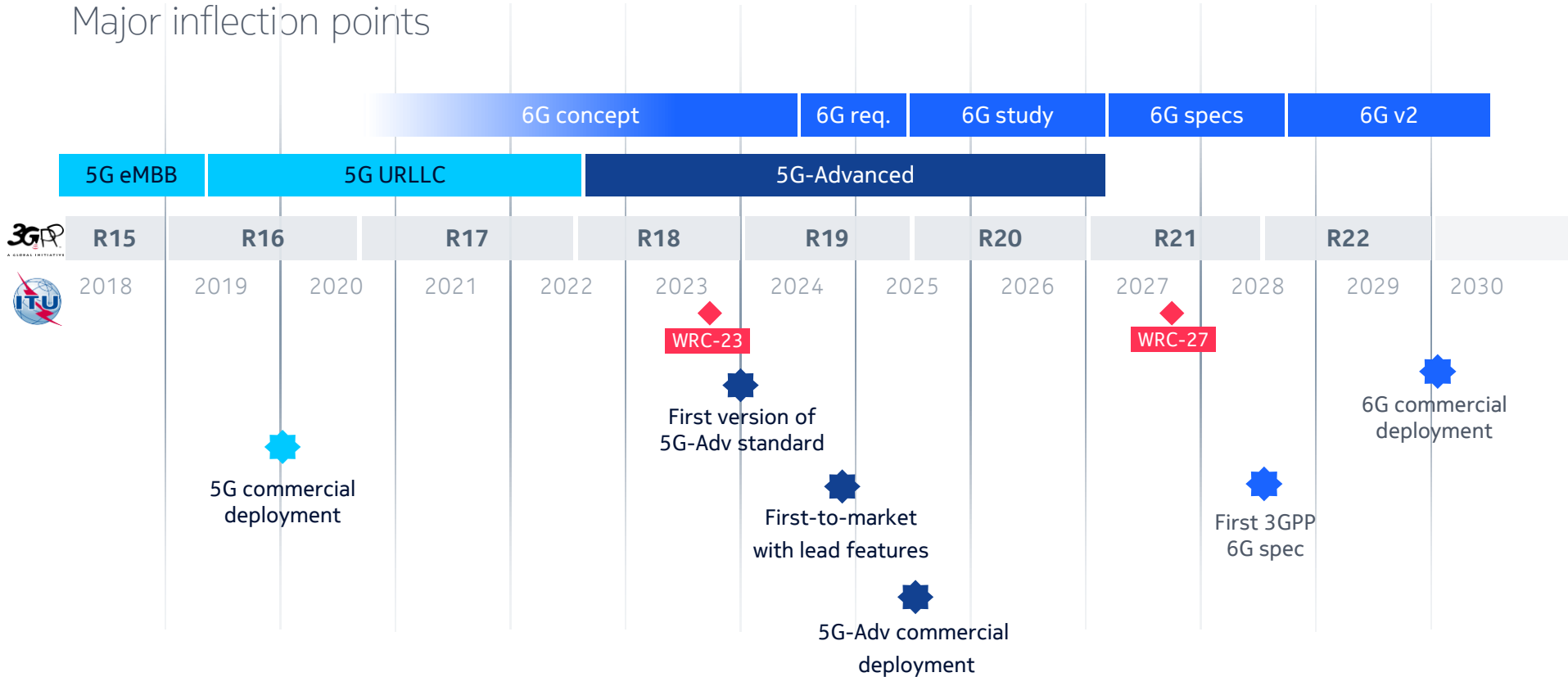
Joint communication and sensing
Wider bandwidth carriers

Capability discovery
Automation

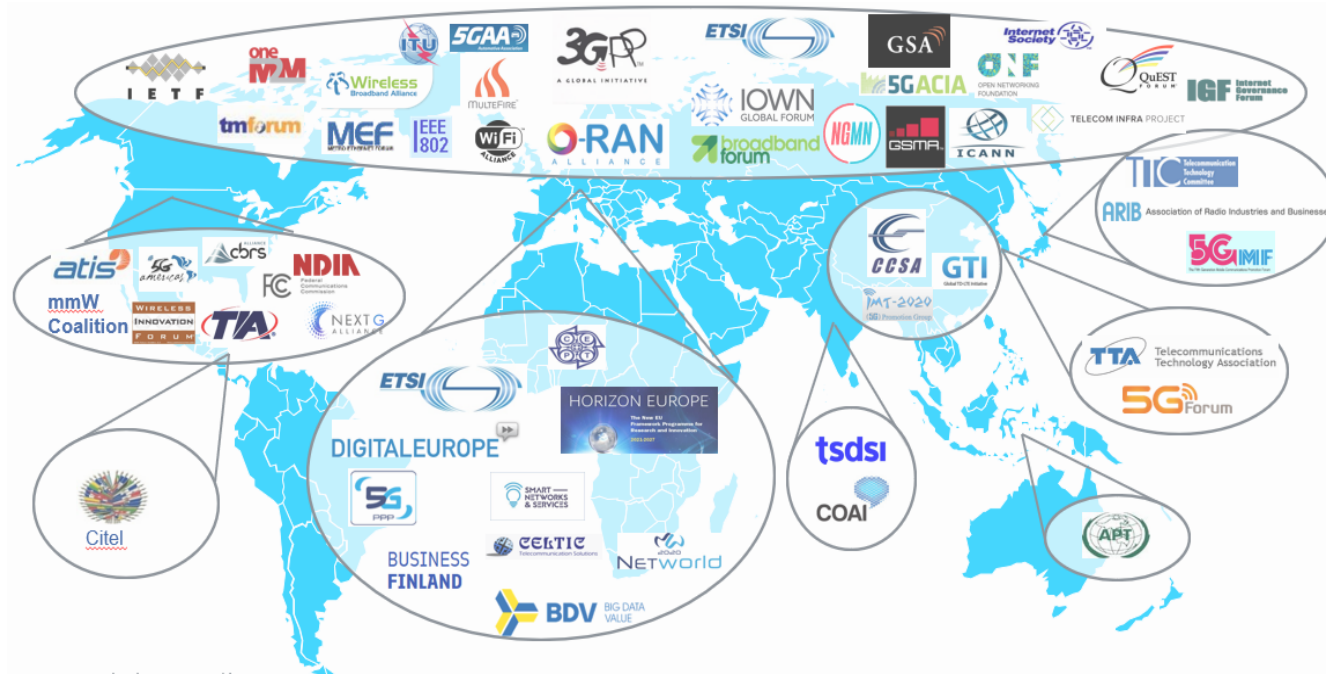
Automated software verification
New privacy techniques, Mesh

5G and 6G Timeline

Major inflection points



We create technology that help s the world act together



Nokia is member of 500 SDO's and Associations
Global network of experts represent Nokia in standardization

We create technology that help s the world act together

Nokia view on standards

Global
Standard for Global Market

Reciprocity
in regional activities

Avoid artificial
Disruption

Support
Sustainability

Adopt Global Standards in
Regions

**Voluntary
Consensus-
based
(WTO)**

**Open
source**

AR/VR
impact

Global Bands for Global Ecosystem : 6G situation

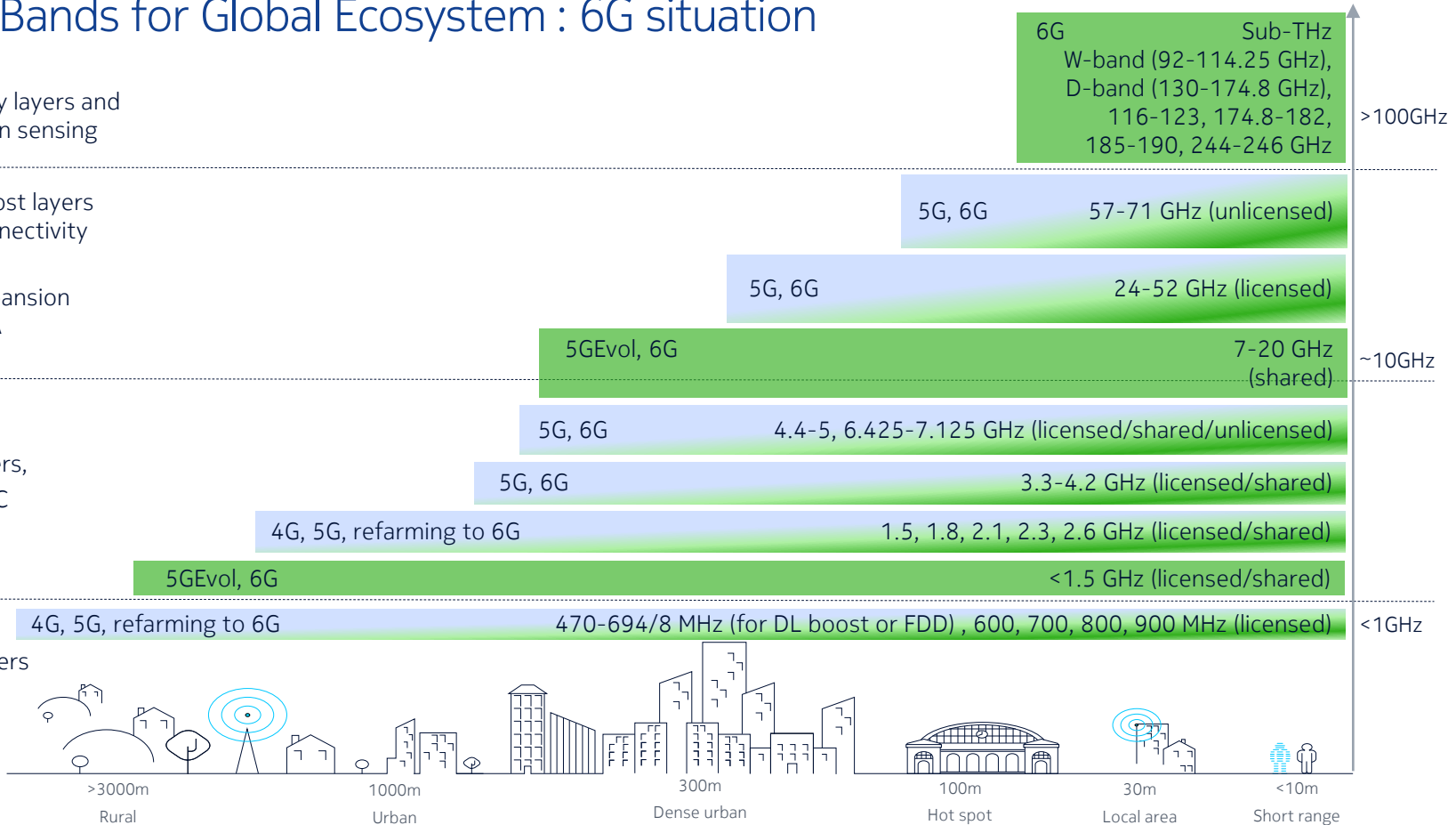
Peak capacity layers and high precision sensing

Capacity boost layers for local connectivity

Capacity expansion layers & FWA

Basic capacity layers, NTN & URLLC

Basic coverage layers & IoT



NOKIA