

The 6G Network at the Center

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NOKIA

Three pillars that reshape technology and the world



Artificial intelligence (AI)

\$7 trillion increase in global GDP
1.5% productivity growth in a decade (*)



Cloud

Distributed cloud deployments
Power of cloud continuum



Connectivity

Networks to be the central force enabling the potential of AI & Cloud



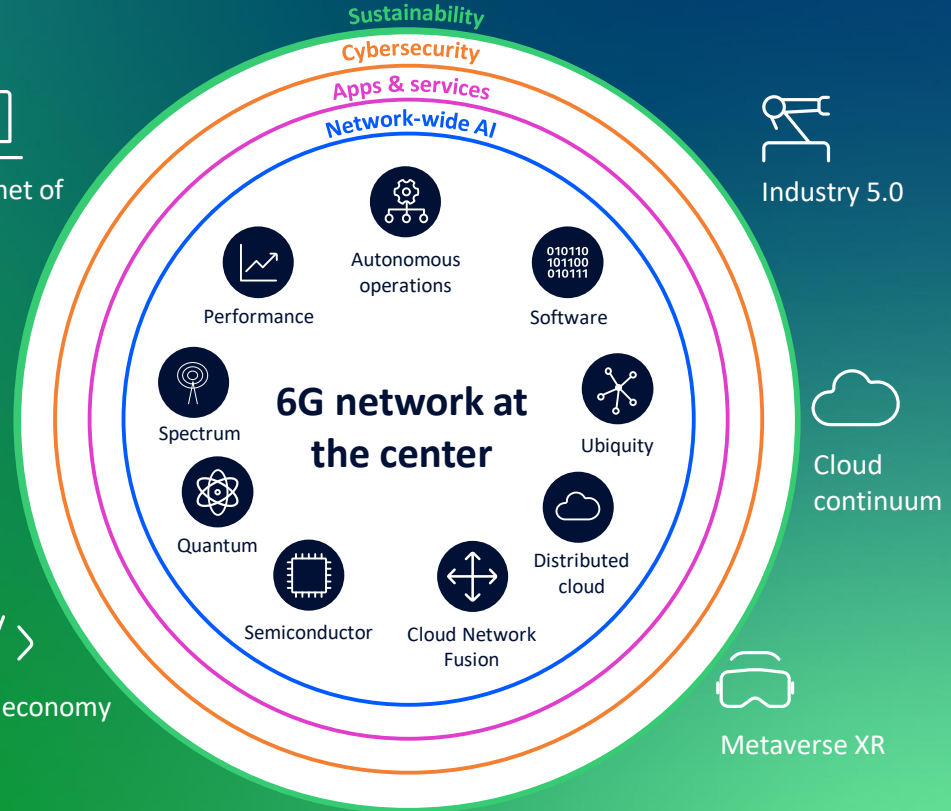
Internet of value



AI



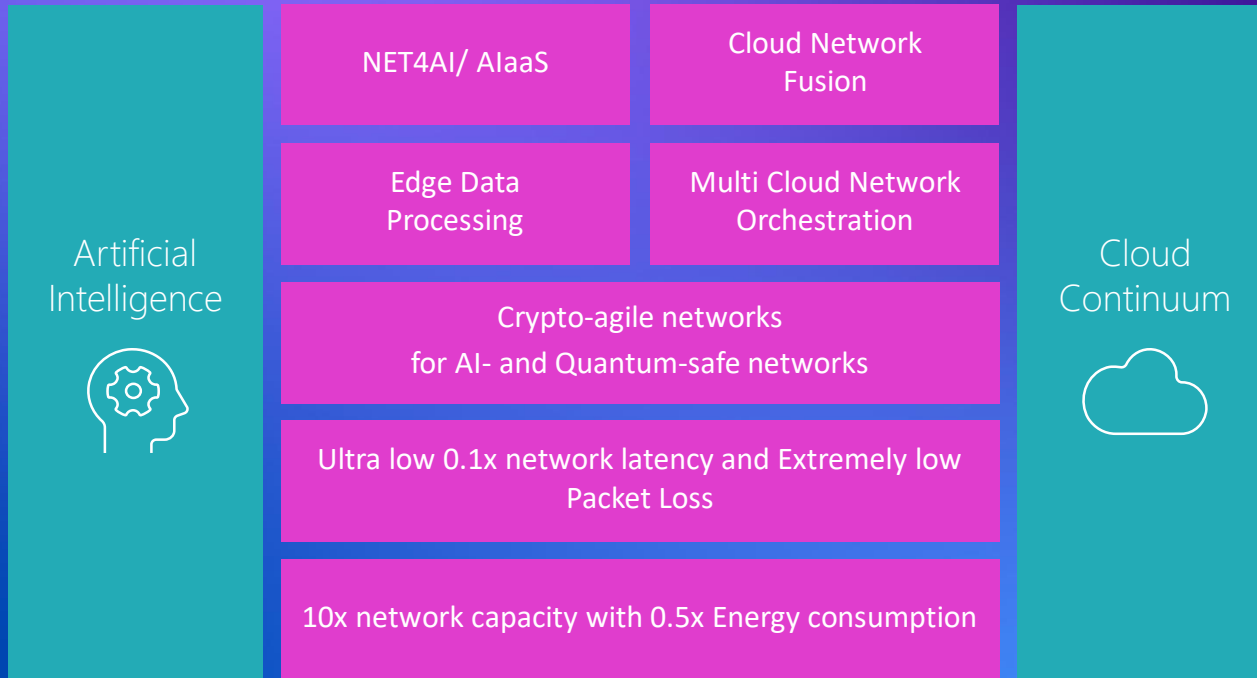
API economy



(*) Goldman Sachs Research

Connectivity...the catalyst

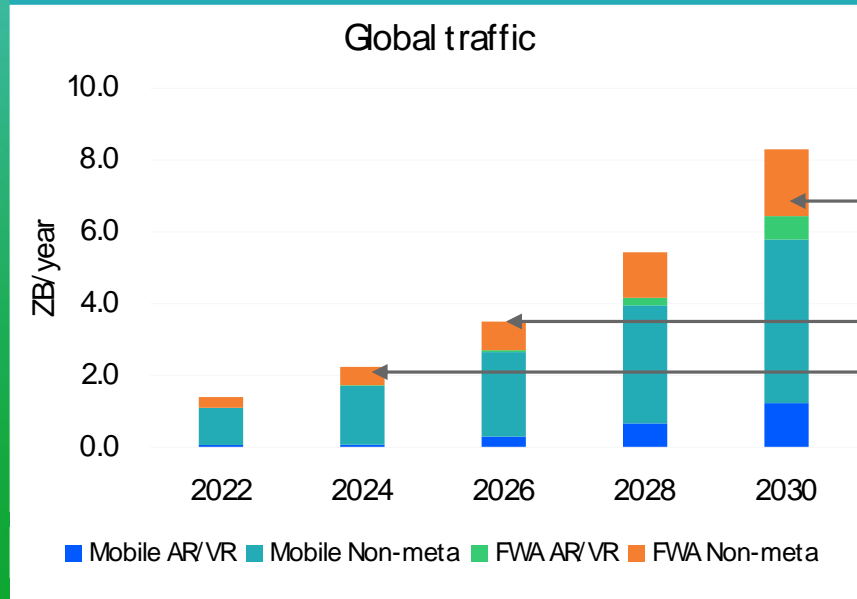
Network acts as a catalyst enabling key functionalities in higher layers



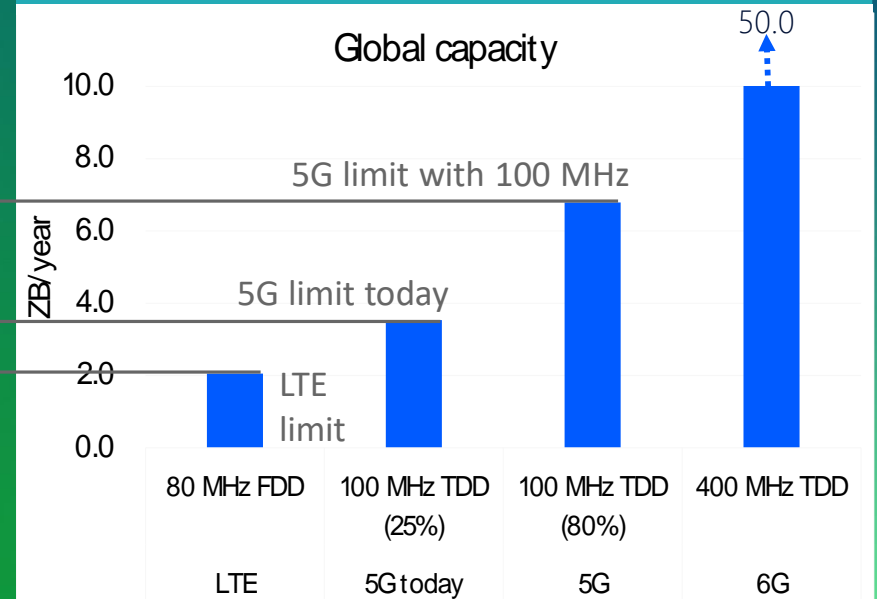
Growing impacts of emerging technologies on demand

Traffic growth requires new spectrum and 6G technology by 2030

5x global mobile network traffic by 2030



Estimated global radio capacity



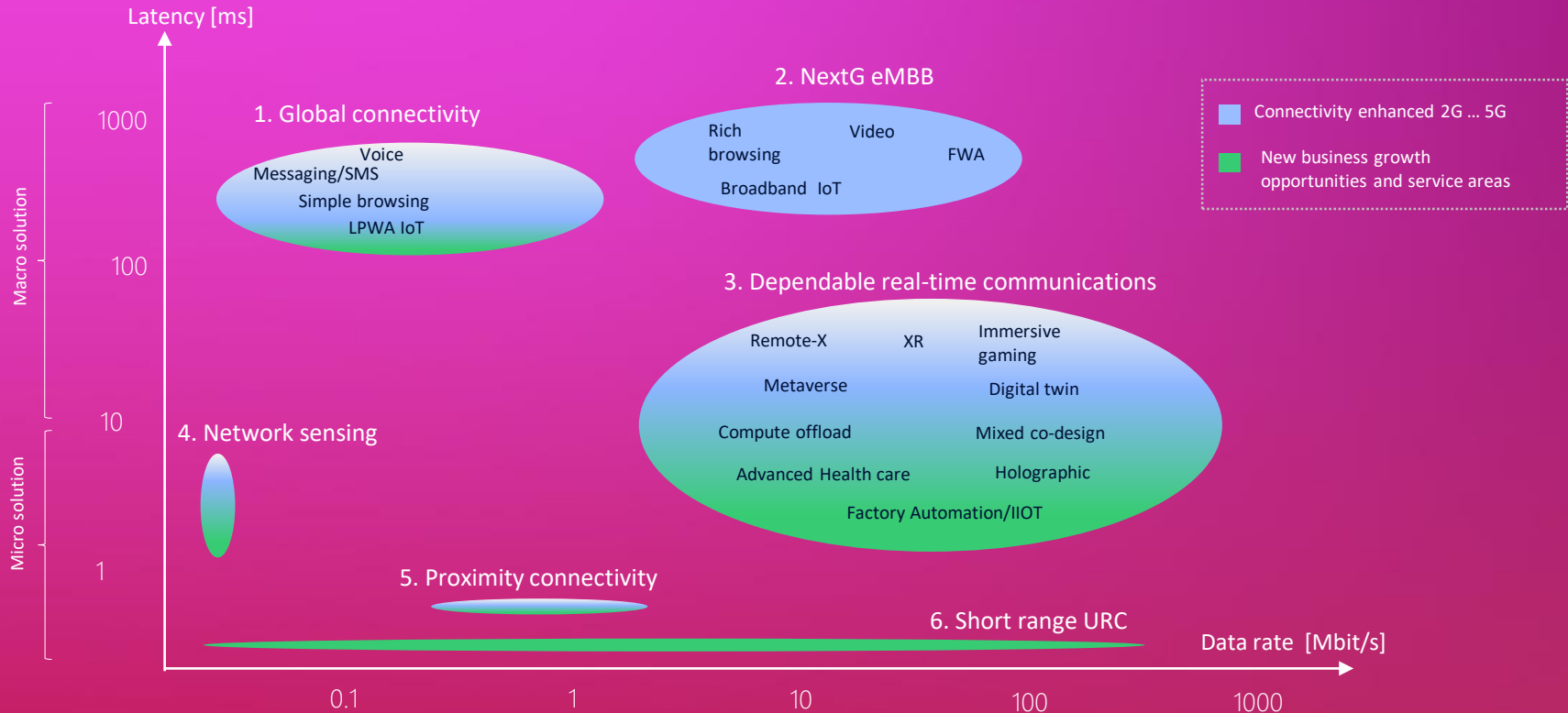
Total 6M BTS sites. 5G TDD rollout today 25% and later 80% of BTS sites.

6G will transform what a network can do, while building on existing technologies



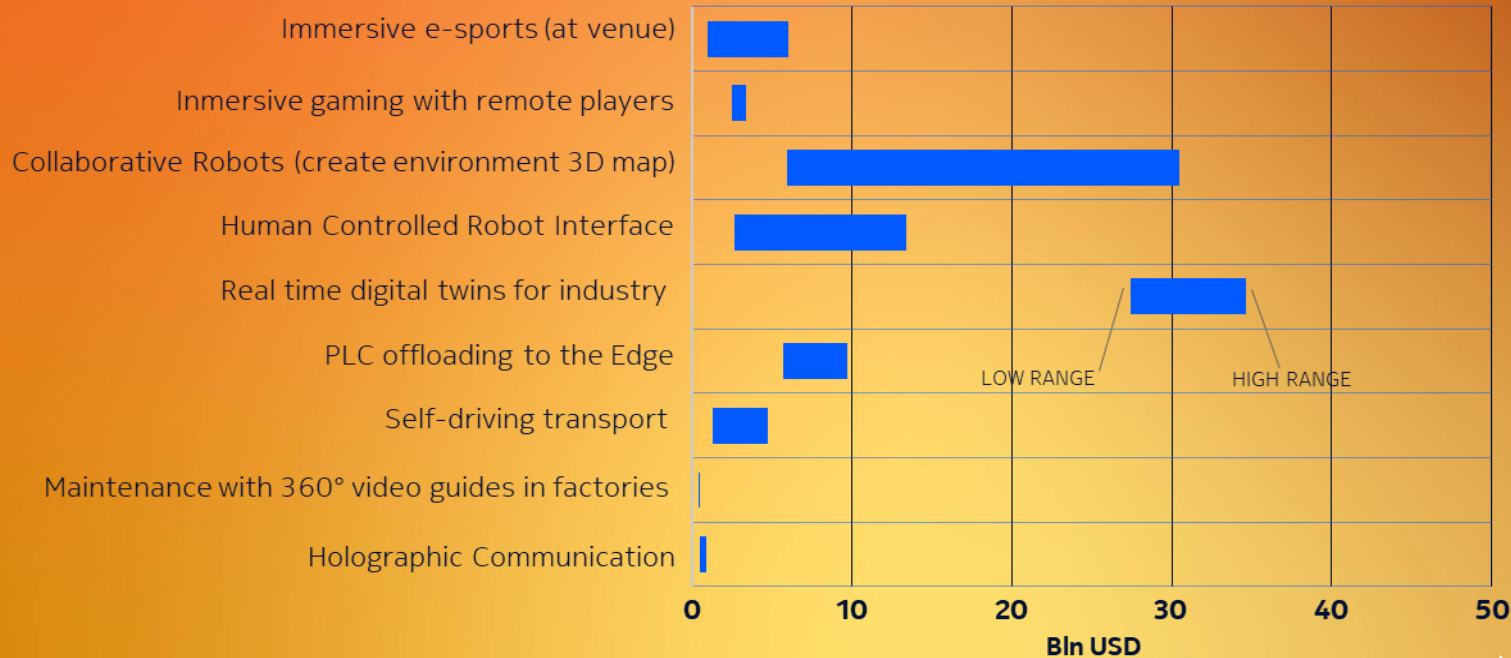
6G value creation - evolutionary or revolutionary?

Both!



Within the dependable real-time communications, industry represents the biggest value creation opportunity

2035 Range-based use case TAM estimations for CSPs

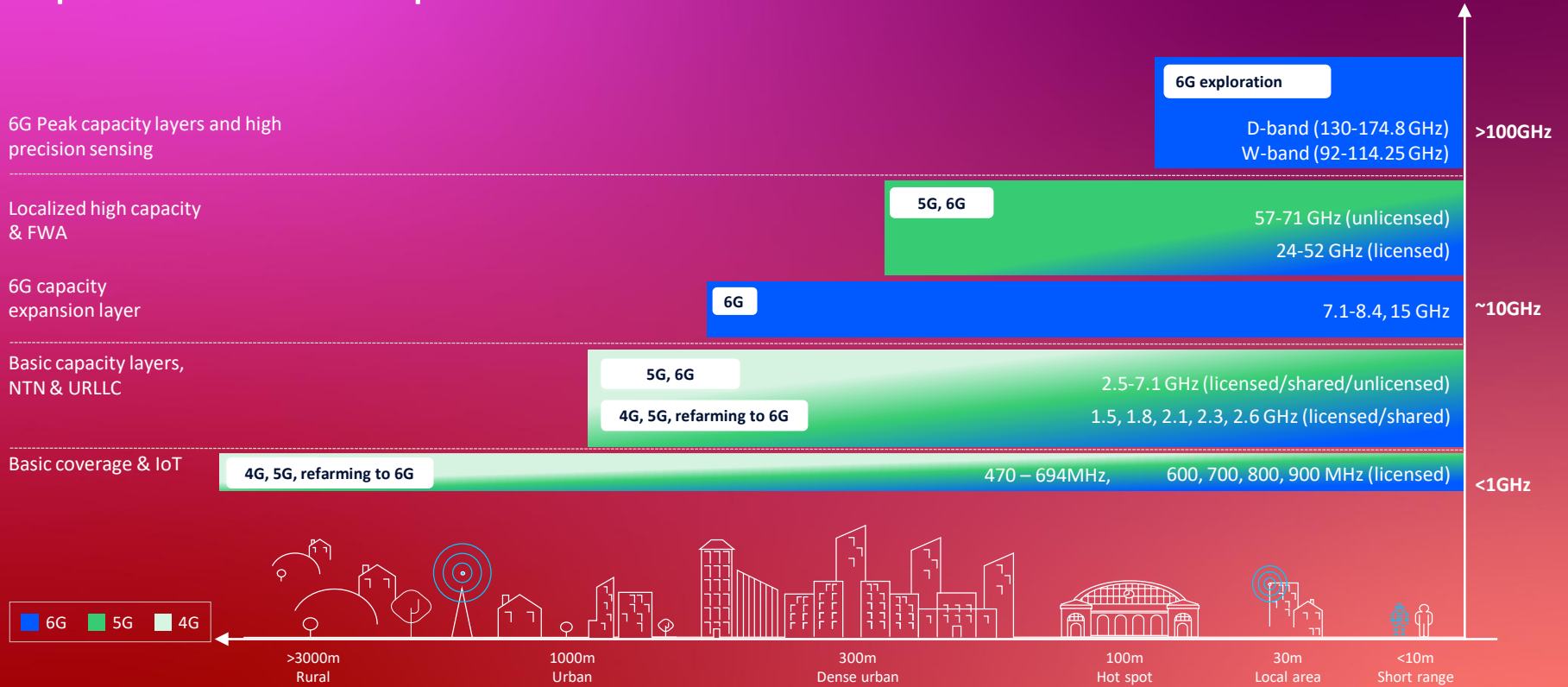


Bringing the future to life

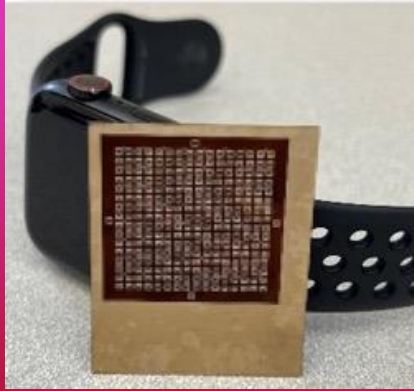
Six key technology areas for the 6G essential infrastructure



Spectrum band options for 6G

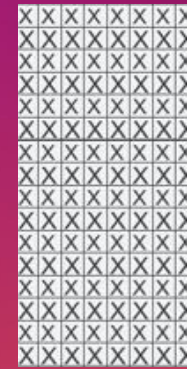


New Spectrum Technologies

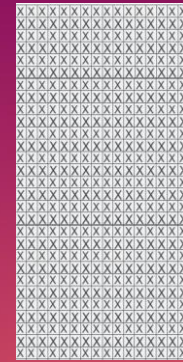


Radio-on-Glass

Sub-THz radio for wireless backhaul
at fiber-like speeds



256 radiators
at 3.5GHz

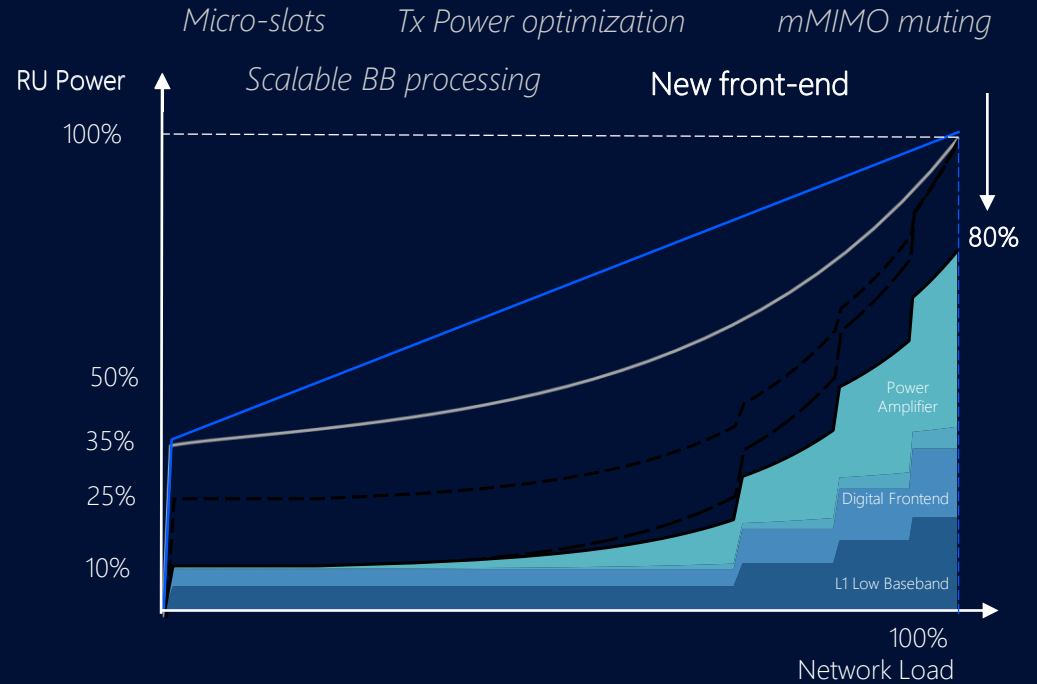


1024 radiators
at 7GHz

Extreme mMIMO

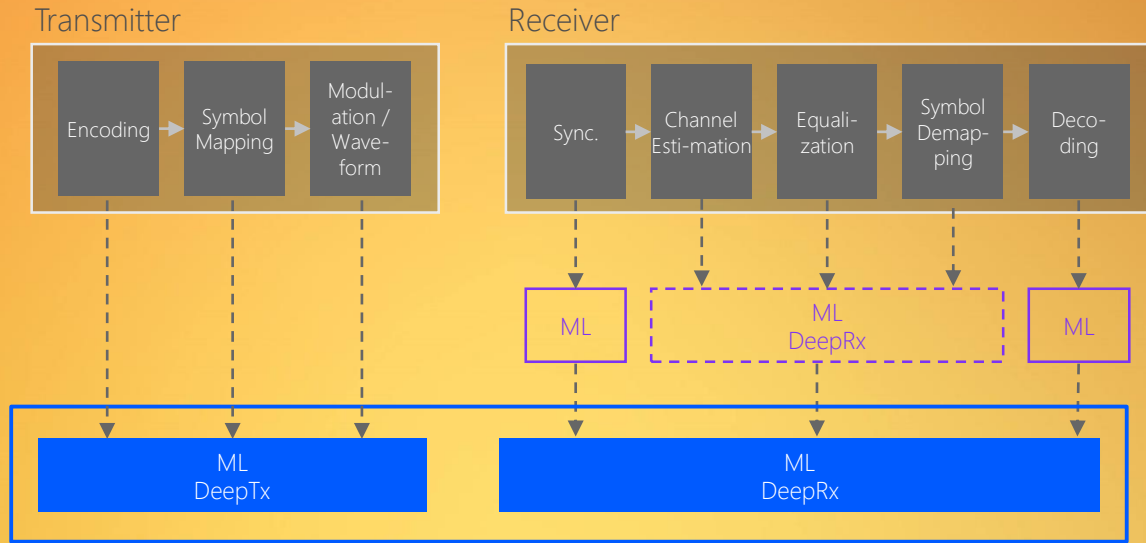
Enhanced capacity at 7-15GHz
using energy efficient system
architecture

Energy Efficient 6G RAN



6G AI-native air interface

The roadmap to learning radios



5G

The classical architecture

5G-Advanced

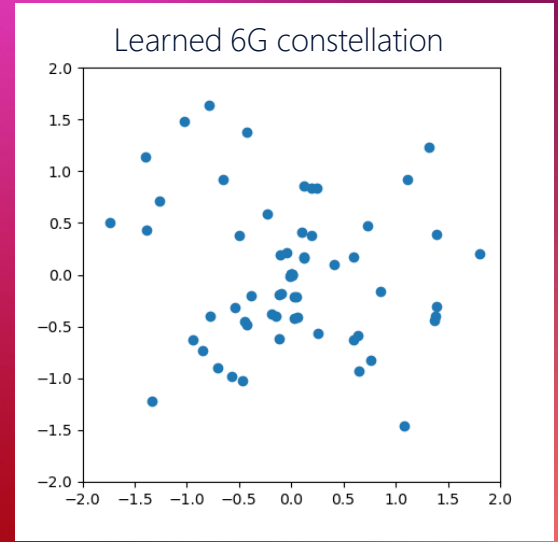
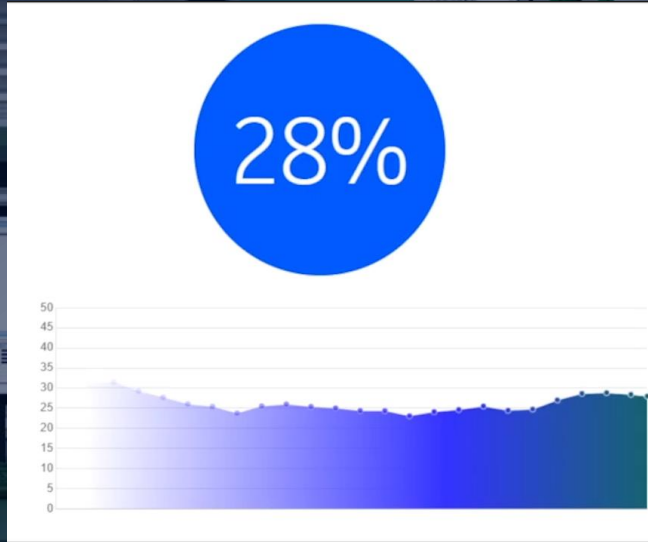
ML enhances receiver implementation

6G

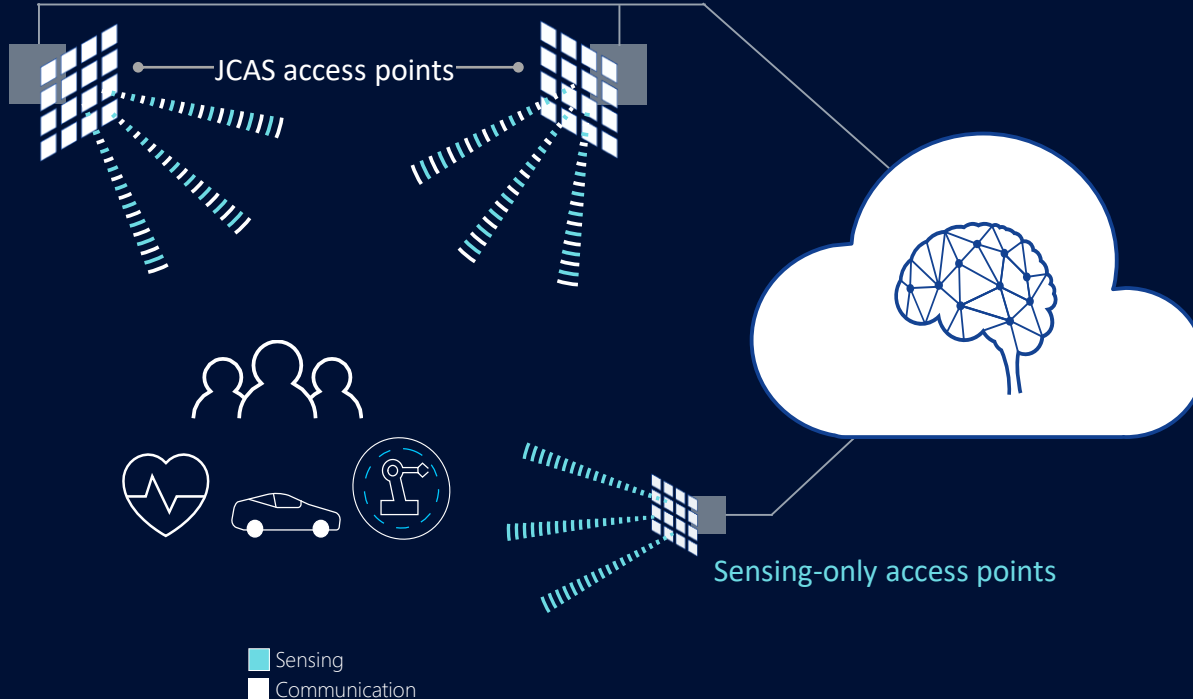
ML designs part of the PHY itself

6G AI native air interface

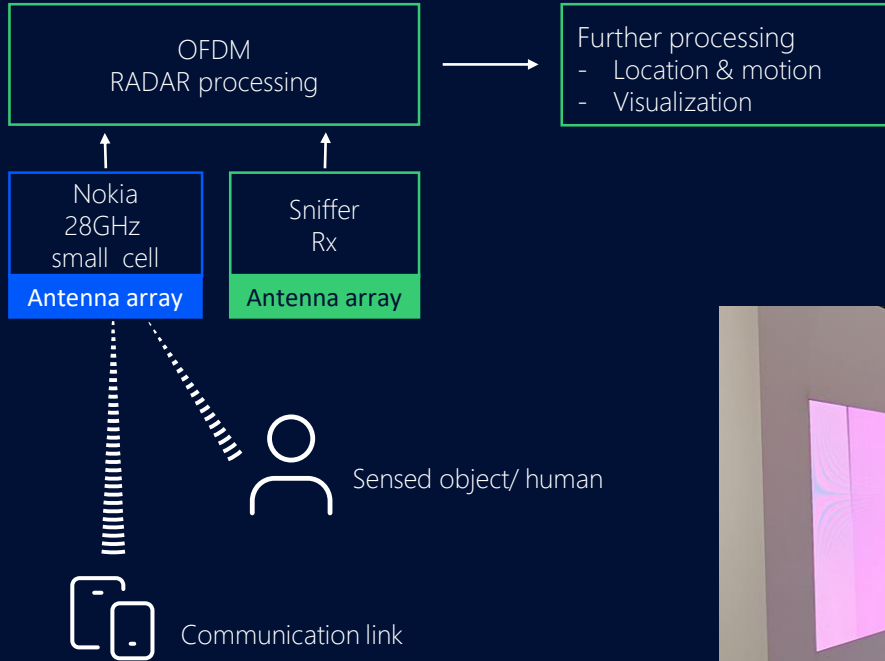
Up to 30% performance improvement demonstrated



Ubiquitous 6G radio as a new sensing modality



Joint Communication and Sensing Proof-of-Concept

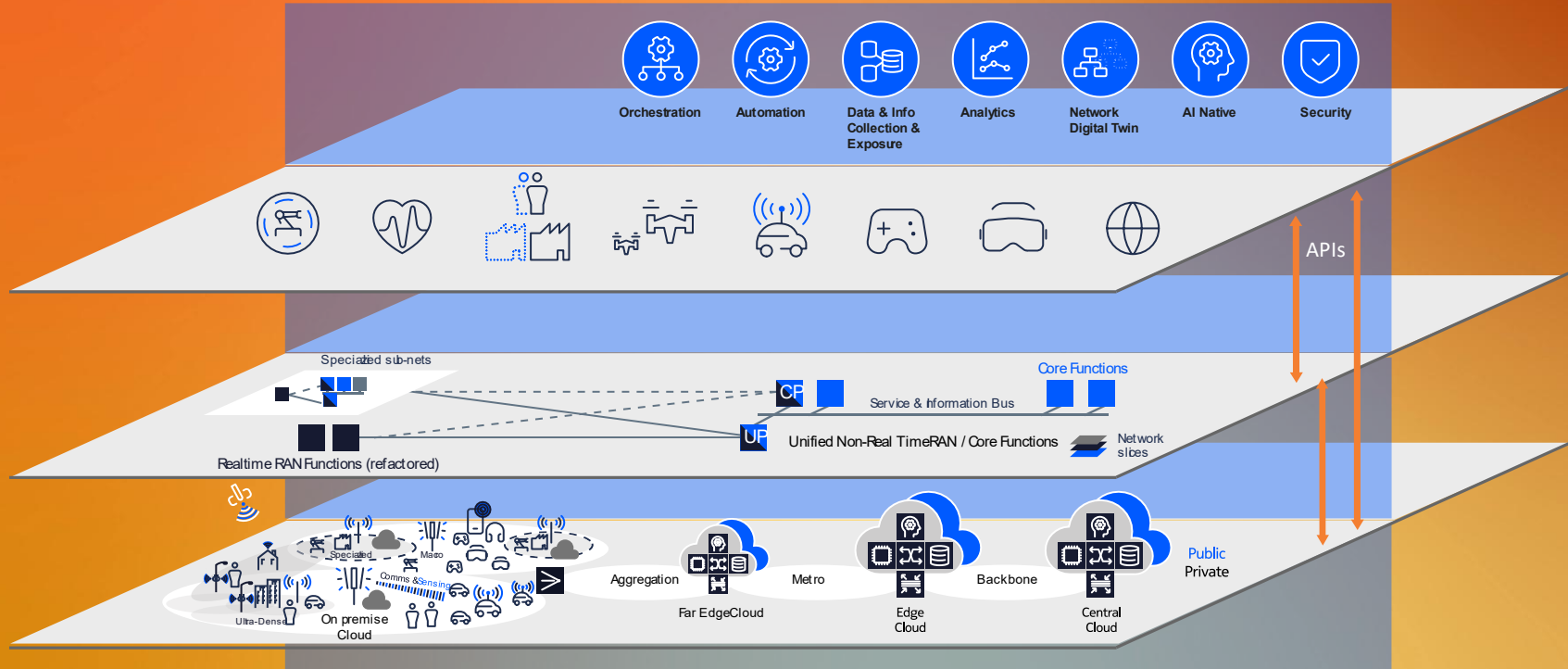


Joint Communication and Sensing

Technology trial ongoing in Arena 2036 – collaboration with Bosch

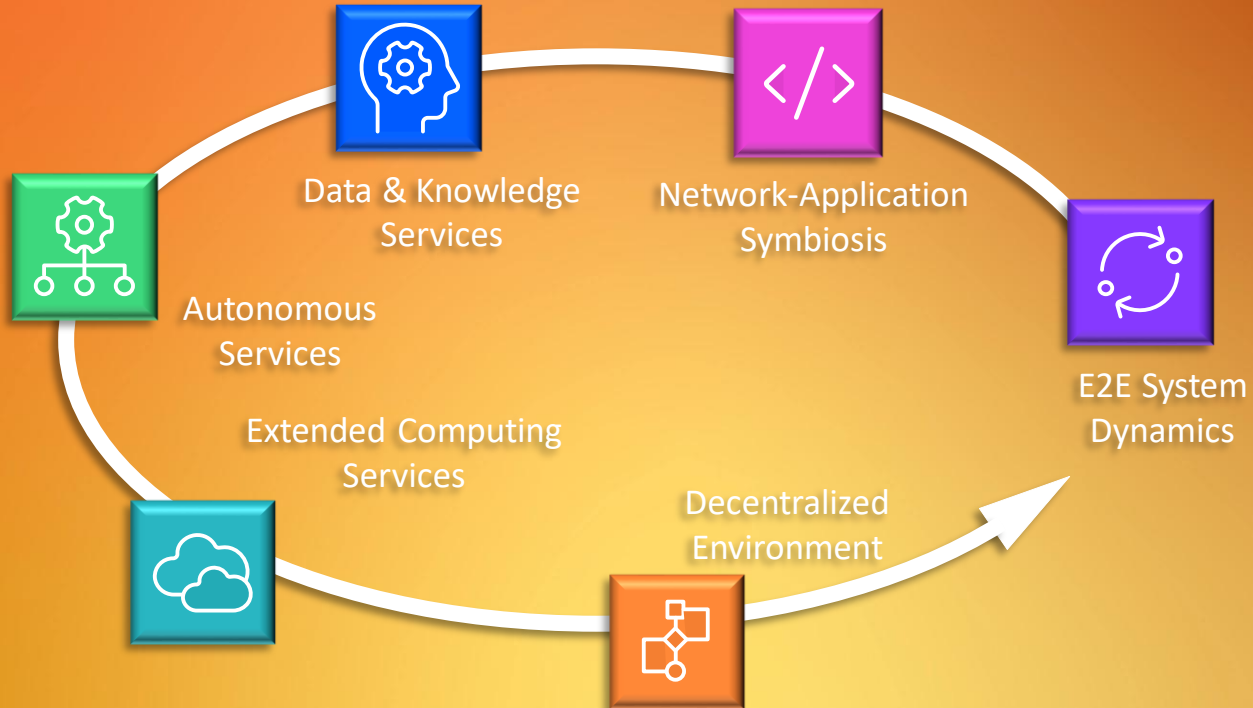


Future 6G network architecture vital for the transformation



UNEXT: Unified Networking Experience

A wholistic system approach to maximize the value of the network at the center



Gearing up for 6G in partnership with the ecosystem

From exploration to systematization



The 6G Network at the Center

The essential third pillar complementing AI and Cloud
to reshape technology and the world



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