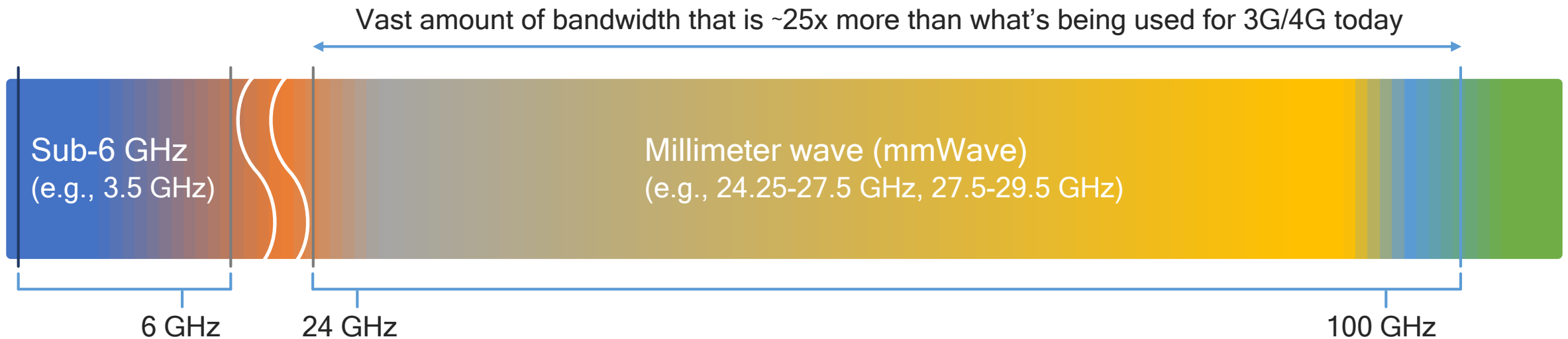


5G Design – Resiliency at the Radio Layer

Aleksandar Damnjanovic
Qualcomm Technologies Inc

5G New Radio (NR)

- New frontier of mobile broadband — mobilizing mmWave



Analog beamforming w/ narrow beam width to overcome path loss

Multi-Gbps data rates

With large bandwidths (100s of MHz)

Much more capacity

With dense spatial reuse

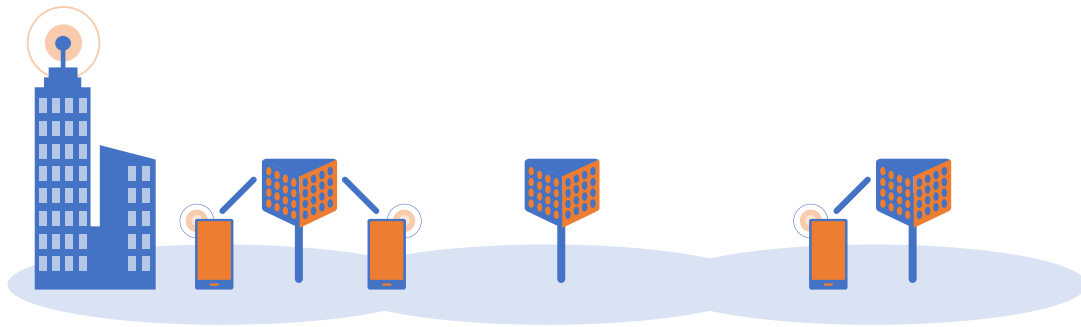
Lower latency

Bringing new opportunities

5G NR mmWave is bringing new opportunities

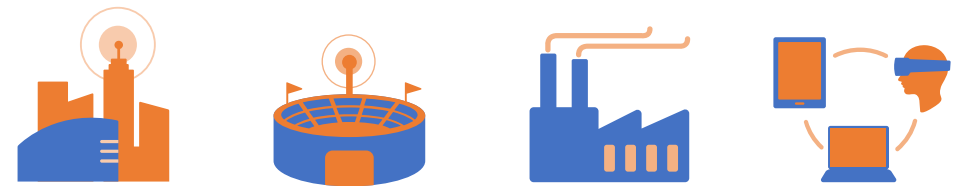
For outdoor deployments...

- Significantly elevate today's mobile experiences — initially focusing on smartphones
- Deployments predominantly driven by mobile operators — initially focusing on dense urban



For indoor deployments...

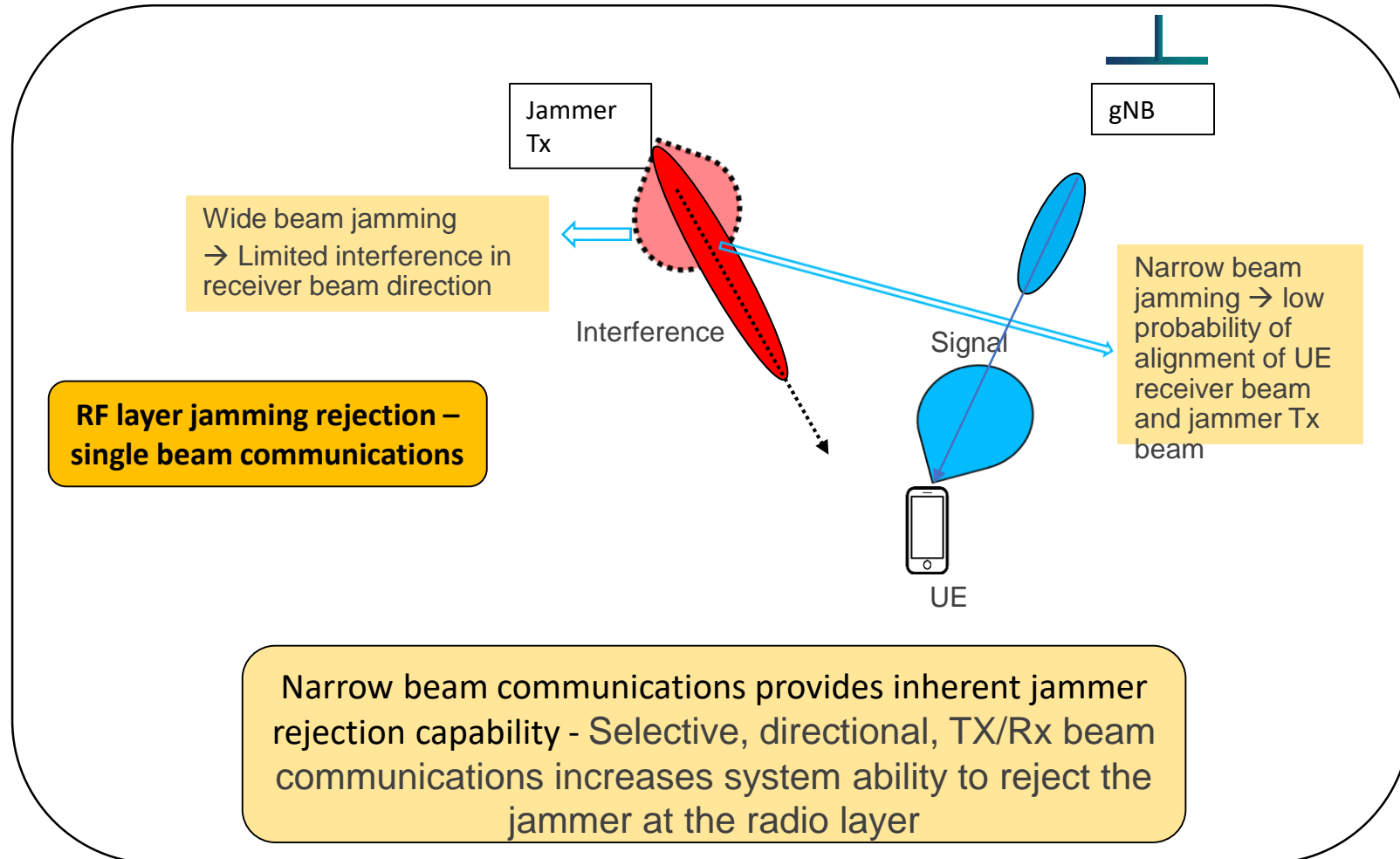
- Complementing existing wireless services provided by Wi-Fi — also expanding to new device types
- Bringing superior speeds and virtually unlimited capacity for enhanced experiences



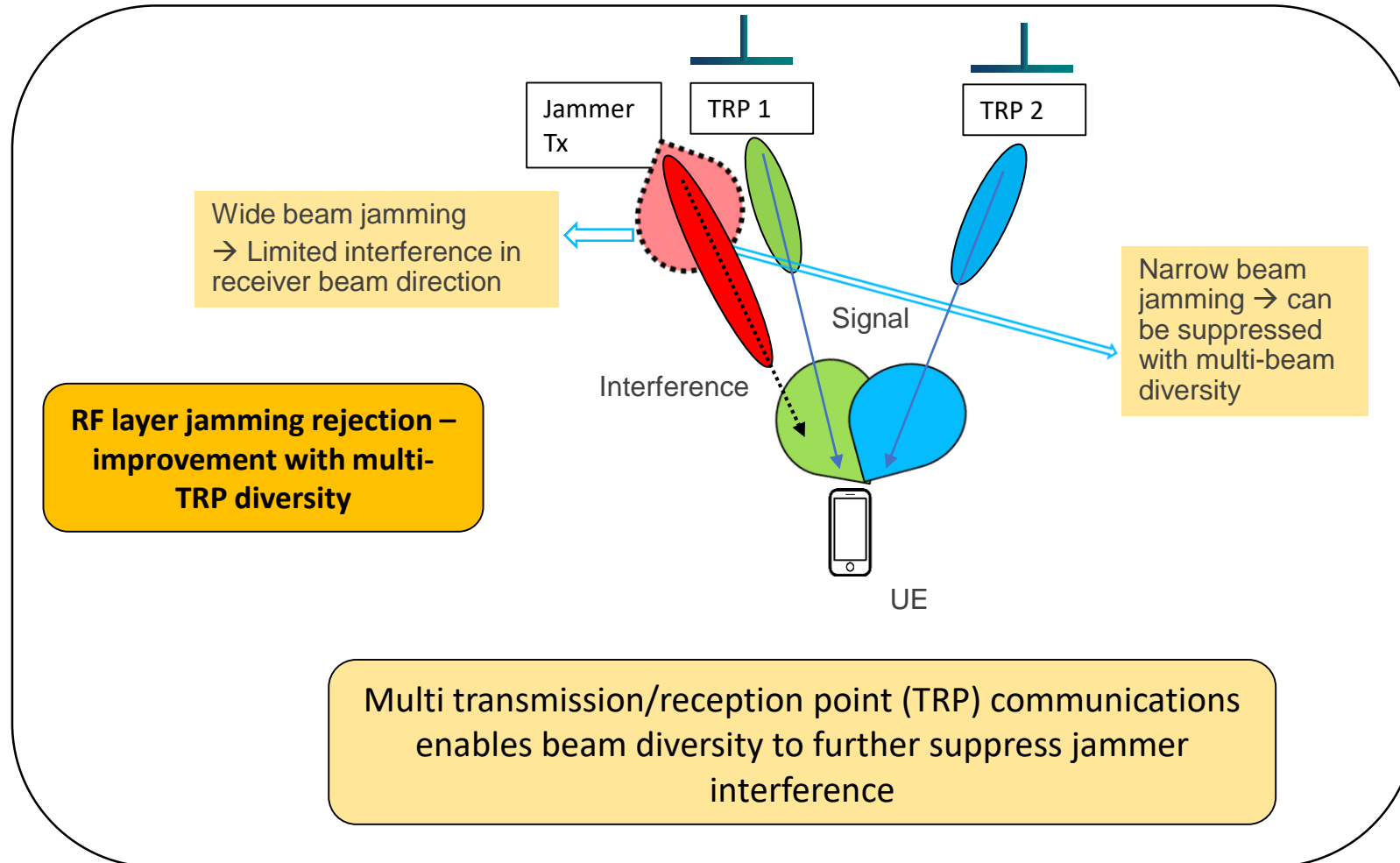
Creating value for the mobile ecosystem

Operators, service providers, venue owners, infra vendors, device OEMs,...

5G mmW jammer rejection with analog beamforming



5G mmW Multi TRP enhancement



5G mmW and RF security

