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Qualcomm

Breaking the wireless barriers to mobilize 5G NR mmWave

Luigi Ardito

Senior Director, Government Affairs
Qualcomm Europe Inc. , Italy Branch



Leading mobile innovation for over 30 years



Digitized mobile communications

Analog
to digital



Redefined computing

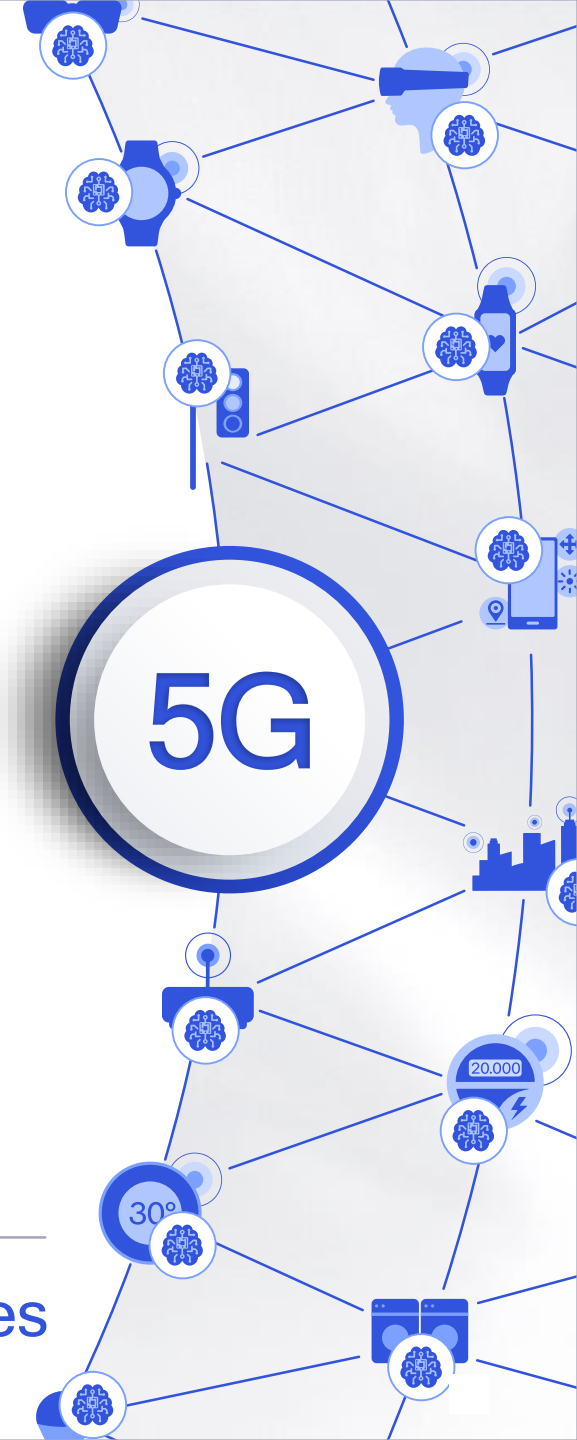
Desktop to
smartphones



Transforming industries

Connecting virtually everything
at the wireless edge

Transforming how the world connects, computes and communicates





5G will address the insatiable demand for mobile broadband

Over 60x growth in mobile data traffic from 2013 to 2024

~136B Gigabytes

Monthly global mobile data traffic in 2024

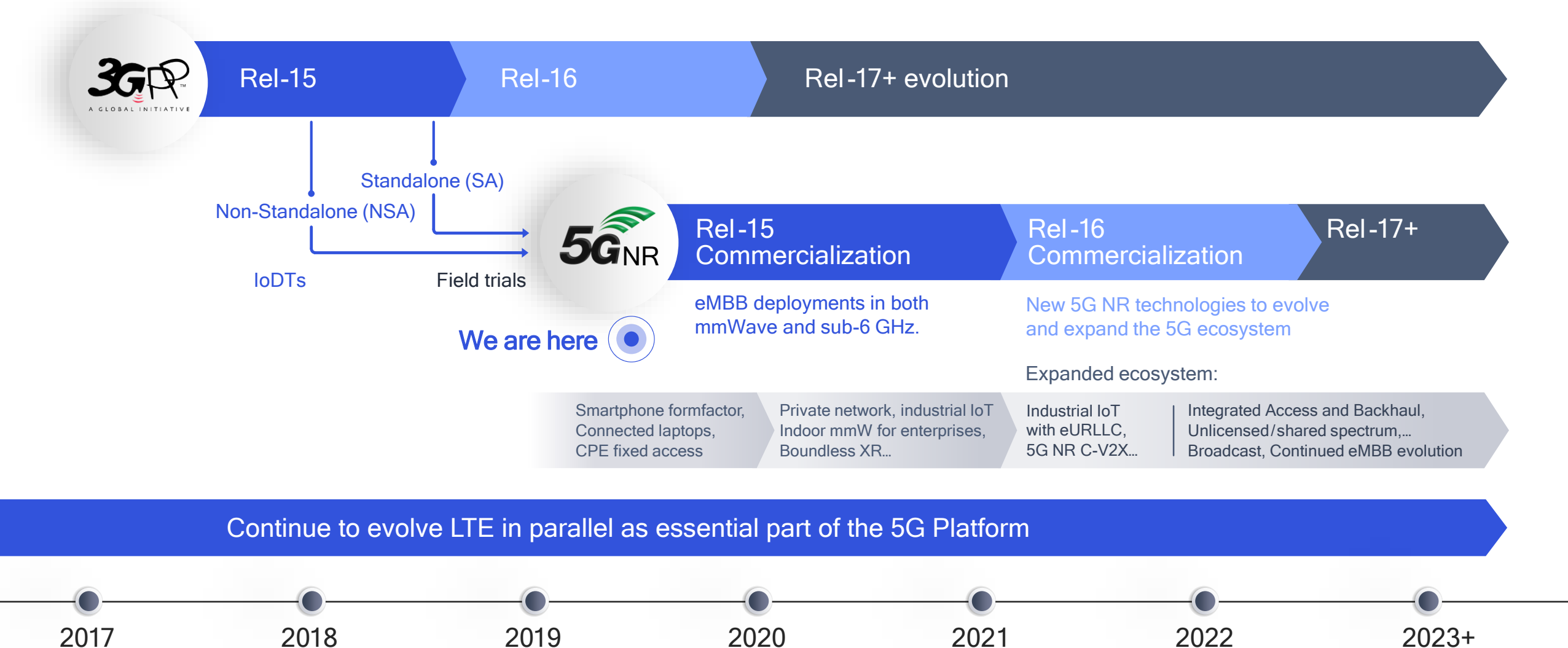


In 2024, ~75% of mobile data traffic from multi-media creation & consumption



In 2024, 25% of mobile data traffic will be carried by 5G networks – 1.3x more than 4G/3G/2G traffic today

Driving the 5G roadmap and ecosystem expansion



Spectrum is critical for 5G success

Using all spectrum types and bands



5G

Licensed spectrum

Exclusive use

Over 40 bands globally for LTE,
remains the industry's top priority

Shared spectrum


New shared spectrum paradigms

Ex: 2.3 GHz Europe / 3.5 GHz USA

Unlicensed spectrum

Shared use

Ex: 2.4 GHz / 5.9-7.1 GHz / 57-71 GHz global



High bands
above 24GHz
(mmWave)

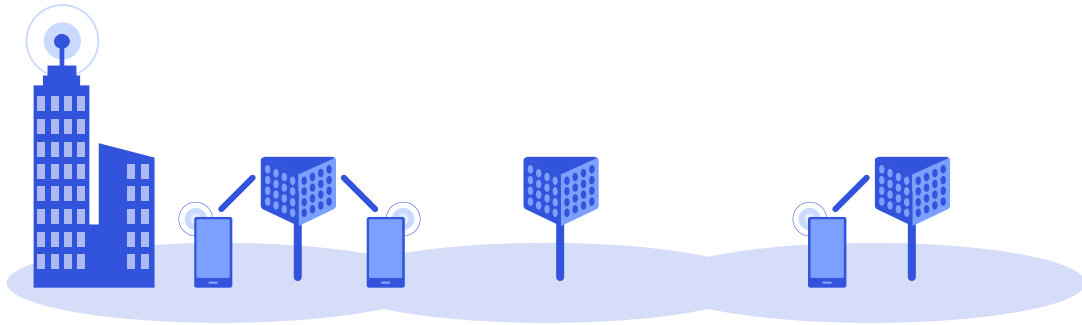
Mid bands
1GHz to 6GHz

Low bands
below 1GHz

5G NR mmWave is bringing new waves of opportunities

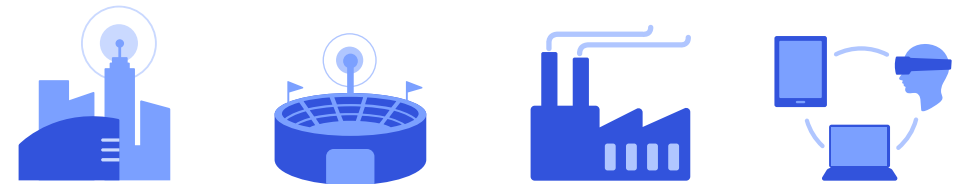
For outdoor deployments...

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



For indoor deployments...

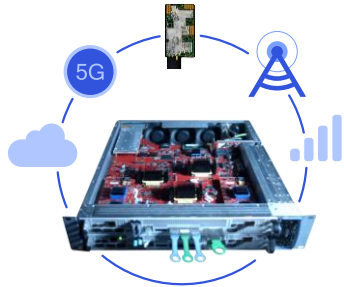
- Complementing existing wireless services provided by Wi-Fi – also expanding to new device types
- Bringing superior speeds and virtually unlimited capacity for enhanced experiences



Creating value for the mobile ecosystem

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

A system approach to the mobile mmWave challenge



1

Cutting-edge R&D

Overcoming numerous challenges to make mmWave viable for mobile use cases

2

Prototyping while driving standards

Validating mobile 5G NR mmWave technologies, feedback loop to standards

3

Advanced network and system simulations

Accurately predicting mmWave coverage, capacity, performance using real network models

4

Broad interoperability testing and trials

Fully utilizing prototype systems and our leading global network experience

5

Cutting-edge modem and RFFE solutions

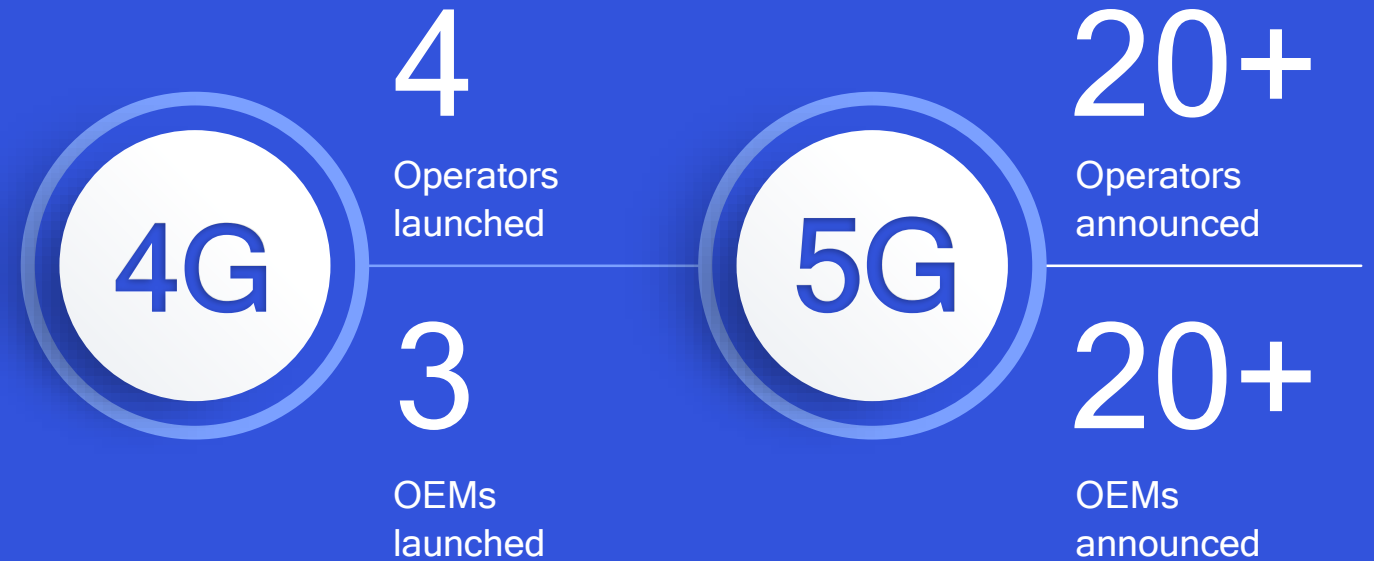
Announced the Qualcomm Snapdragon X50 5G modem family & QTM052 antenna module



2019 is the year of 5G

Deployments happening
in regions across the globe

5G rollout happening much faster than 4G






Source: IHS Report Jan '19, Qualcomm Technologies data

Year 1 announcements underscore tremendous momentum with 5G



Thank you

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