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@qualcomm_tech

Bangalore

Qualcomm

Making 5G a reality in 2019

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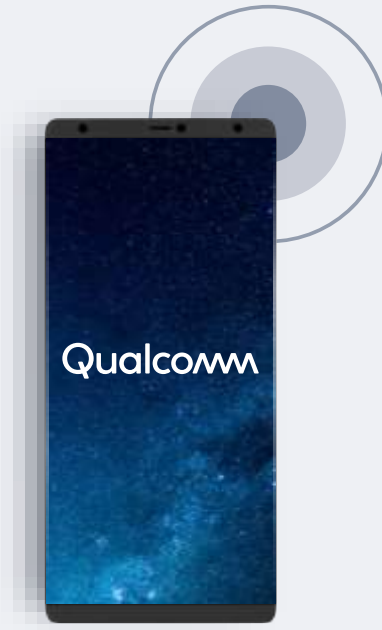
@vinosbabu

Leading mobile innovation for over 30 years



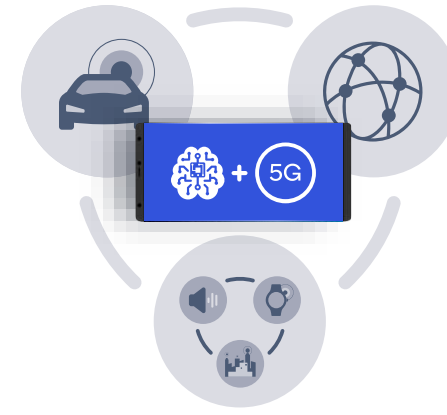
Digitized mobile communications

Analog to digital



Redefined computing

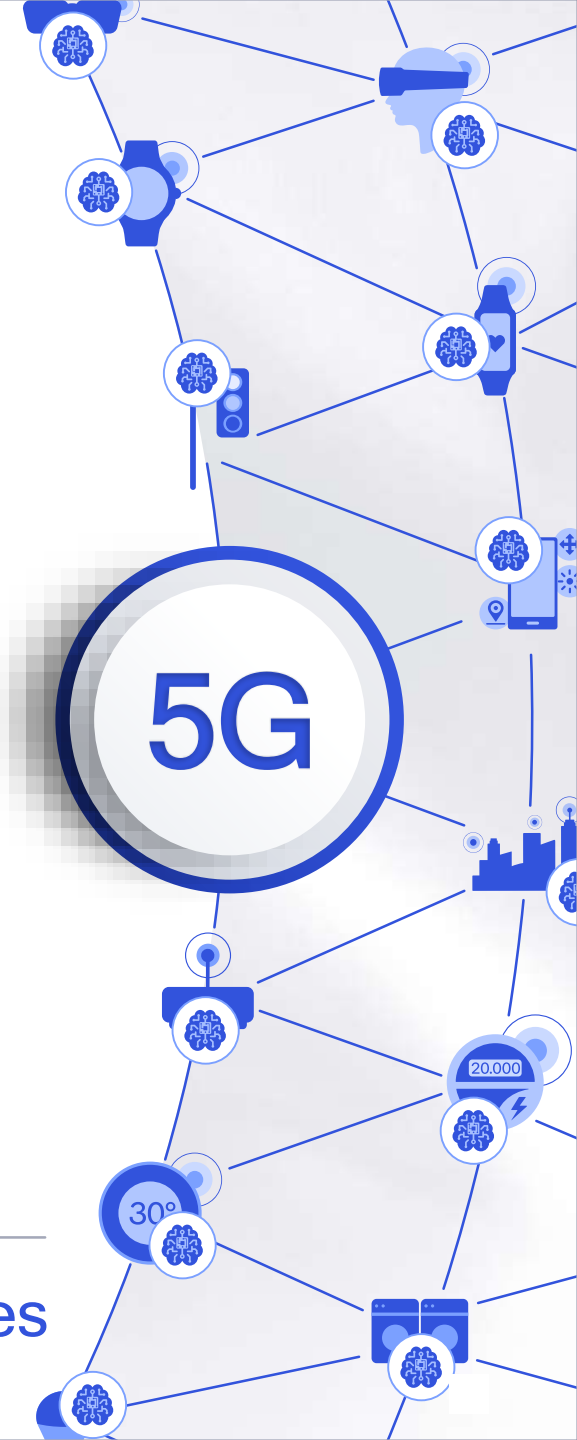
Desktop to smartphones



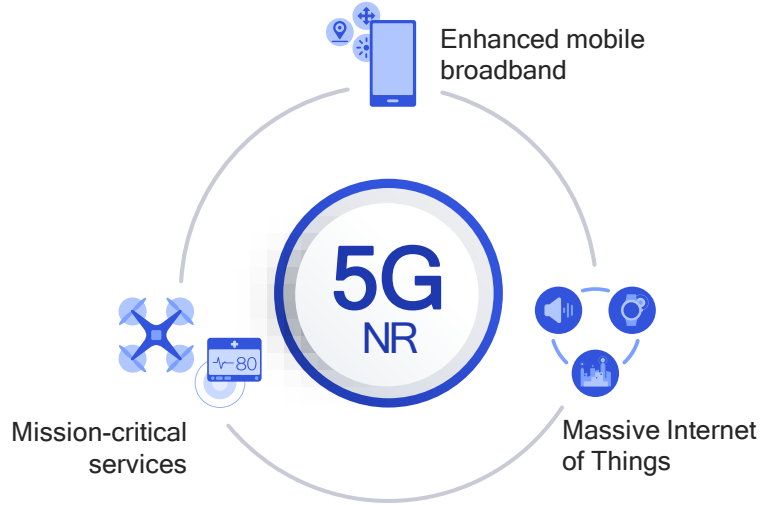
Transforming industries

Connecting virtually everything at the wireless edge

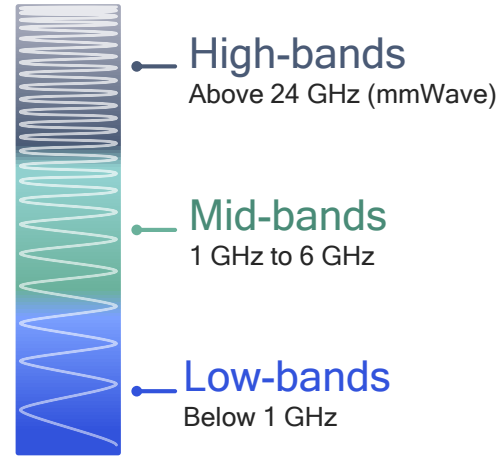
Transforming how the world connects, computes and communicates



Designing a unified, more capable 5G air interface



Diverse services



Licensed/shared/unlicensed

Diverse spectrum



Diverse deployments

Existing, emerging, and unforeseen services - a platform for future innovation

Enabler to the factory of the future



Safer, autonomous transportation



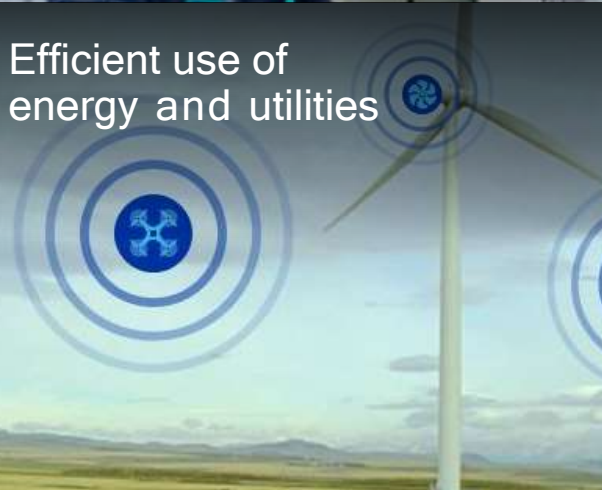
Reliable access to remote healthcare



Precision agriculture



Efficient use of energy and utilities



Private networks for logistics, enterprises, industrial,...



Sustainable smart cities and infrastructure



Digitized logistics and retail

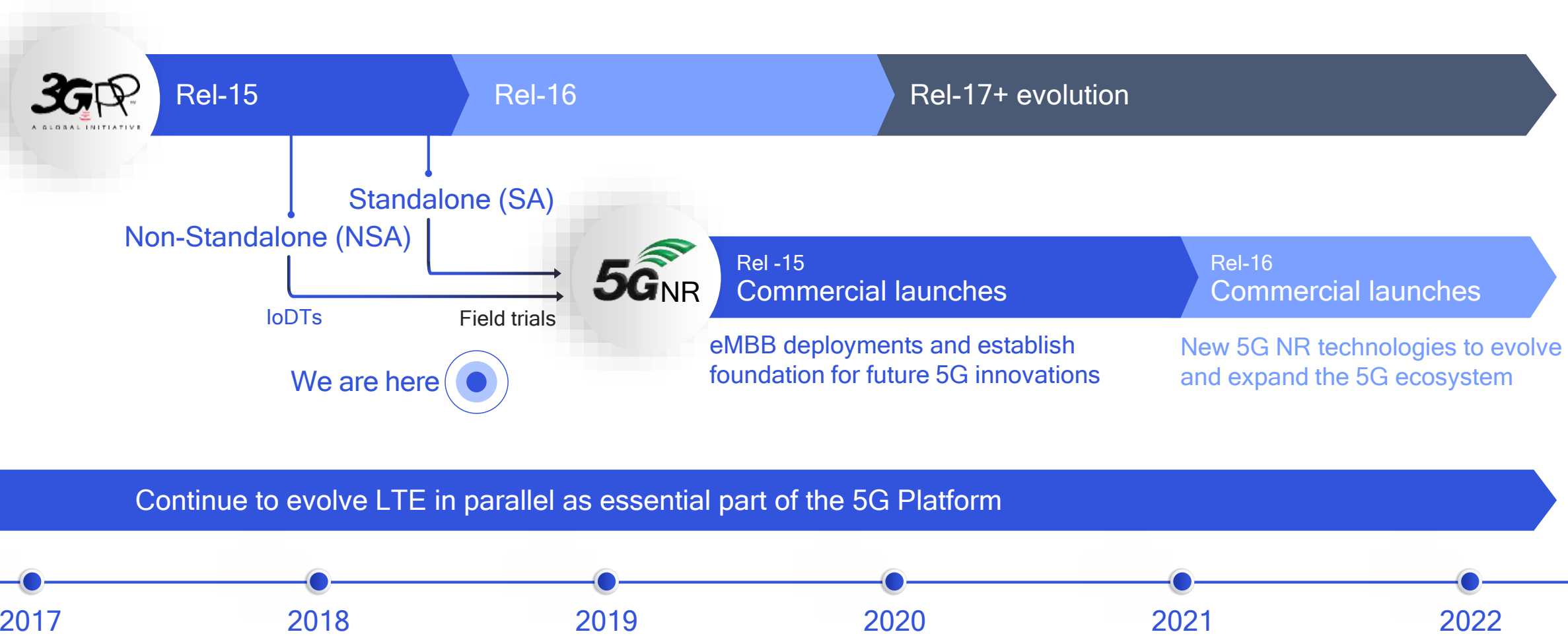


5G will expand the mobile ecosystem to new industries

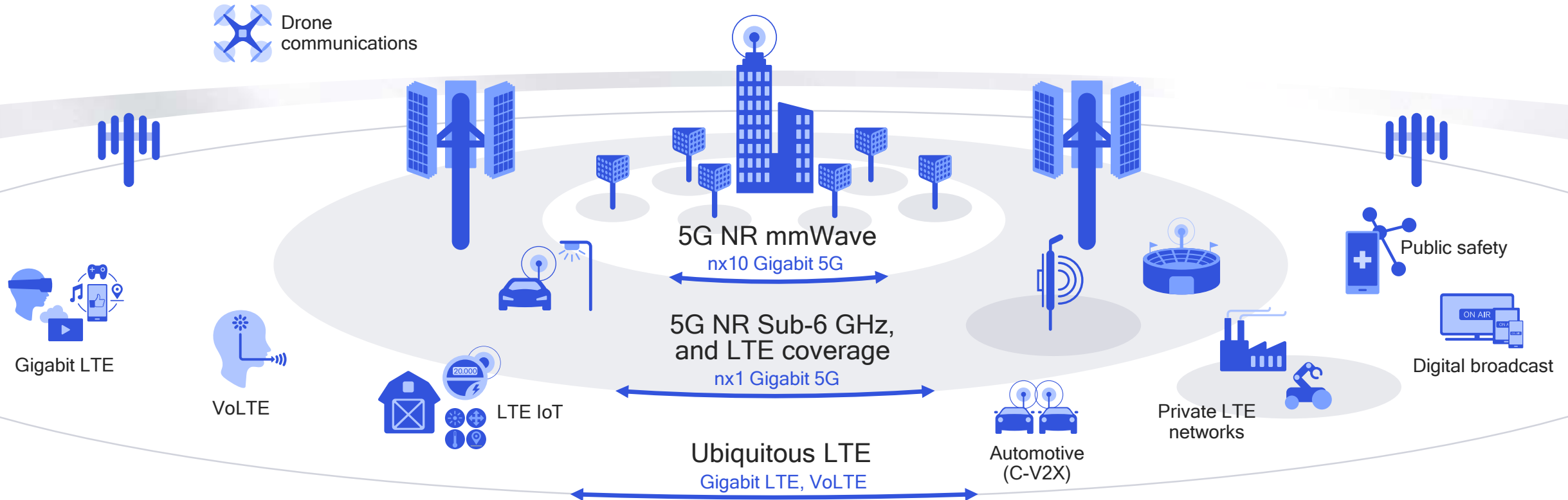
Powering the digital economy >\$12 Trillion In goods and services by 2035*

* The 5G Economy, an independent study from IHS Markit, Penn Schoen Berland and Berkeley Research Group, commissioned by Qualcomm

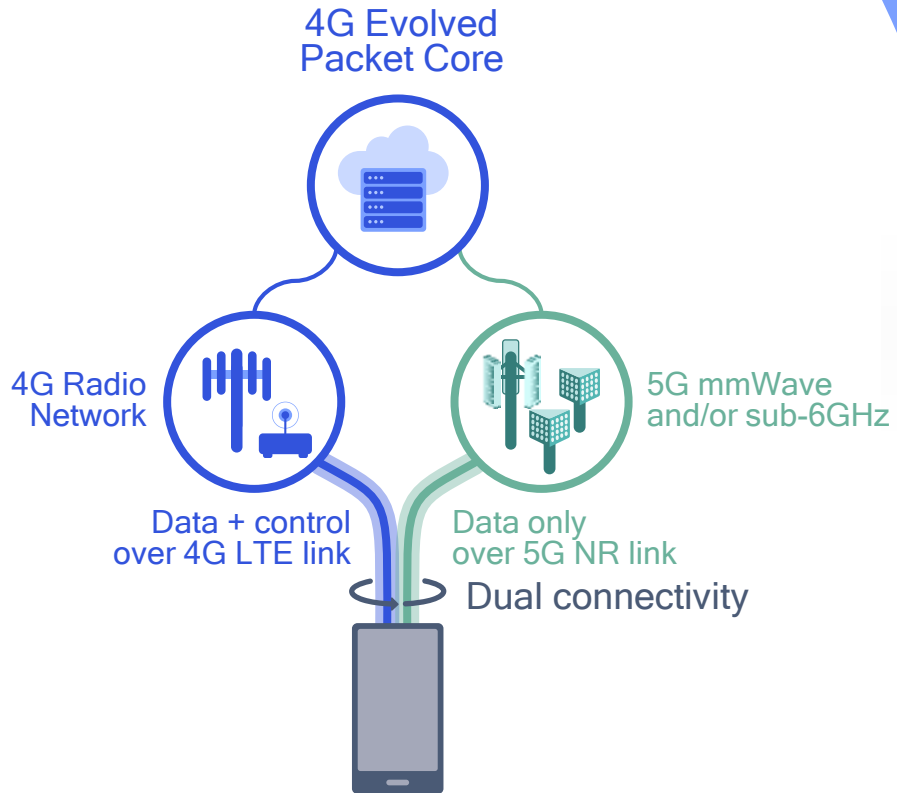
Driving the 5G roadmap and 3GPP ecosystem expansion



LTE Advanced Pro accelerates the ecosystem expansion

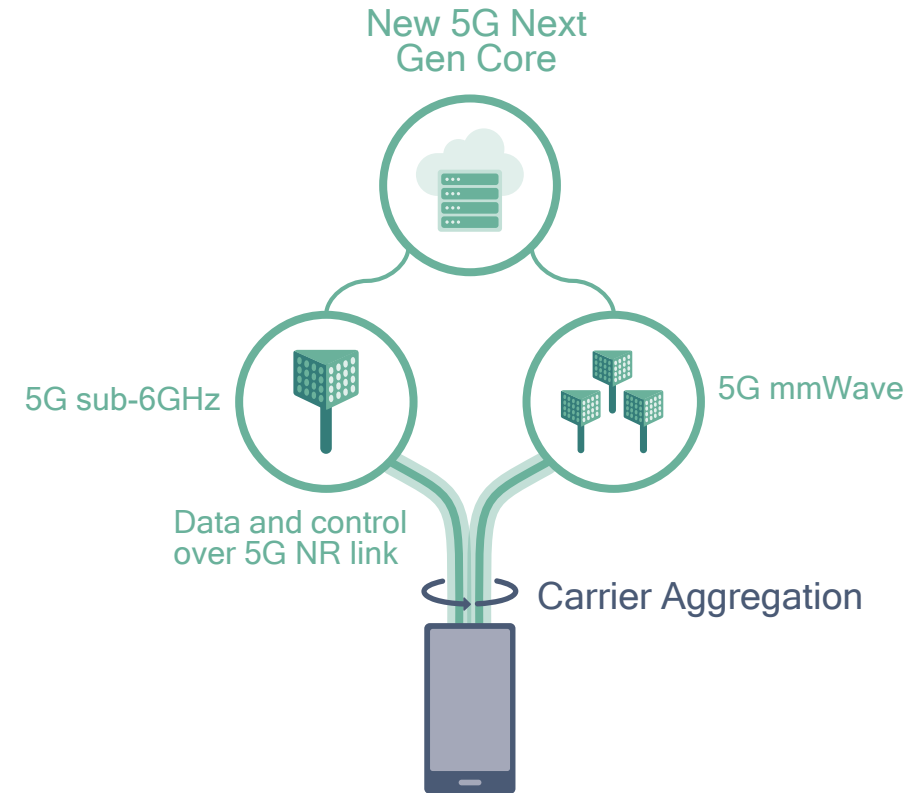


Non-Standalone (NSA) stepping stone to new core



Fast-to-launch | VoLTE & CS voice

Standalone (SA) for immediate new core benefits



NFV and SDN | VoNR & fallback to VoLTE

World's first 5G NR milestones led by Qualcomm



ZTE中兴

World's first interoperable 5G NR sub-6 GHz data connection

November 2017



ERICSSON

World's first interoperable 5G NR mmWave data connection

December 2017



NOKIA

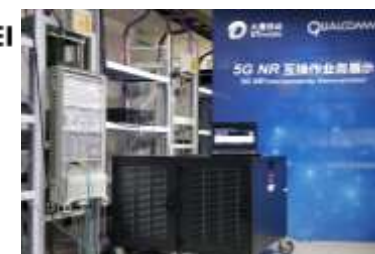
Successful multi-band 5G NR interoperability testing

February 2018



Interoperable 5G NR sub-6 GHz & mmWave connections with 5 vendors

MWC 2018



大唐移动 DTmobile

5G NR interoperability testing preparing for the Chinese mass market

June 2018



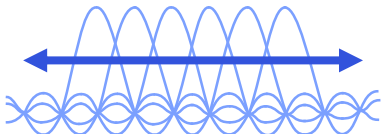
Rel-15 5G NR trials based on Snapdragon X50 modem chipset

2H-2018

Driving the 5G ecosystem towards 2019 launches in collaboration with 20+ global mobile network operators and 18+ device manufactures

Our technology inventions drove NR Building Blocks

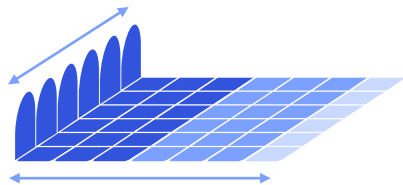
Scalable OFDM-based air interface



Scalable OFDM numerology

Address diverse spectrum, deployments/services

Flexible slot-based framework



Self-contained slot structure

Low latency, URLLC, forward compatibility

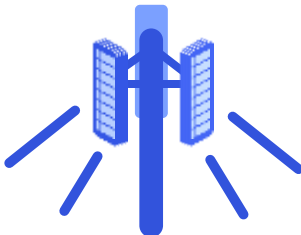
Advanced channel coding



Multi-Edge LDPC and CRC-Aided Polar

Support large data blocks, reliable control channel

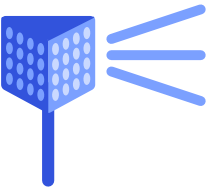
Massive MIMO



Reciprocity-based MU-MIMO

Large # of antennas to increase coverage/capacity

Mobile mmWave

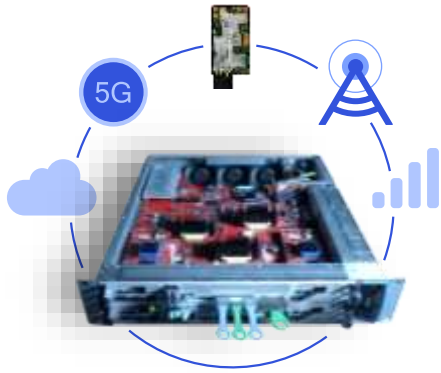


Beamforming and beam-tracking

For extreme capacity and throughput

Early R&D investments | Best-in-class prototypes | Fundamental contributions to 3GPP

Making 5G NR a commercial reality for 2019



Best-in-class 5G prototype systems

Designing and testing 5G technologies for many years



5G NR standards and technology leadership

Our technology inventions are driving the 5G NR standard



5G NR interoperability testing and trials

Leveraging prototype systems and our leading global network experience



Qualcomm®
snapdragon™
X50 5G modem

Modem and RFFE leadership

Announced the Qualcomm Snapdragon X50 5G modem family

Qualcomm Snapdragon is a product of Qualcomm Technologies, Inc. and/or its subsidiaries

————— LTE foundational technologies —————>

Qualcomm

5G NR

5G is the foundation to what's next.
We are the foundation to 5G.

Learn more at www.qualcomm.com/5G





Making 5G NR
a commercial reality
for 2019 eMBB
deployments



Driving the expansion
of 5G NR ecosystem
and opportunity



Thank you!

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