

February 27, 2017



Qualcomm, Ericsson and NTT DOCOMO Announce Collaboration on 5G NR Trials to Accelerate Wide-scale 5G Deployments in Japan

-- Trials will be Compliant with the 5G NR 3GPP Specification, the Global 5G Standard; Driving the Ecosystem Towards Rapid Commercialization at Scale --

BARCELONA, Spain, Feb. 27, 2017 /PRNewswire/ -- Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated (NASDAQ: QCOM), Ericsson and NTT DOCOMO today announced plans to conduct interoperability testing and over-the-air field trials in Japan based on the 5G New Radio (NR) specifications being developed by 3GPP. The trials will operate in mid-band spectrum at 4.5 GHz, as well as millimeter wave (mmWave) spectrum at 28 GHz, showcasing the unified 5G NR design across diverse spectrum bands. The trials intend to drive the mobile ecosystem toward rapid validation and commercialization of 5G NR technologies at scale, enabling timely commercial network launches based on 3GPP Rel-15 standard compliant 5G NR infrastructure and devices.

In the trials, the Companies will showcase 5G NR technologies to efficiently achieve multi-gigabit per second data rates at significantly lower latency and better reliability than today's network, amongst other capabilities. These technologies will be critical to meeting the increasing connectivity requirements for emerging consumer mobile broadband experiences such as virtual reality, augmented reality and connected cloud computing, as well as enabling new high-reliability, low-latency services for use cases such as autonomous vehicles, drones and industrial equipment.

The trials will utilize device prototype and base station solutions from Qualcomm Technologies and Ericsson respectively, along with trial environments from NTT DOCOMO, to simulate real-world scenarios across a broad set of use cases and deployment scenarios. The trial will include 5G NR operation at 4.5 GHz, which allows a large bandwidth resulting in high data rates and good capacity with reasonable coverage to address the large number of envisioned 5G use cases. The trial will showcase advanced 3GPP 5G NR technologies including Massive Multiple-Input Multiple-Output (MIMO) antenna technology, beamforming techniques, adaptive self-contained TDD, scalable OFDM-based waveforms to support wider bandwidths, advanced coding and modulation schemes, and a new flexible, low-latency slot structure based design. In addition, the trial will include 5G NR operation in mmWave spectrum at 28 GHz, employing advanced 5G NR antenna technology to deliver robust and sustained mobile broadband communications, including non-line-of-sight (NLOS) environments and device mobility.

"Over the last few months Qualcomm Technologies has announced several 5G NR trials with Ericsson and leading operators around the world, and we are very excited to extend that work in Japan with NTT DOCOMO," said Matt Grob, executive vice president and chief technology officer, Qualcomm Technologies, Inc. "Trials based on the 3GPP 5G NR specification accelerate the path to commercial deployments."

"We are excited to conduct early 5G NR trials based on the 3GPP specification with Qualcomm Technologies and Ericsson," said Seizo Onoe, executive vice president and chief technology officer, NTT DOCOMO. "NTT DOCOMO plans to deploy a 5G NR commercial system by 2020 and it is essential that the industry cooperate closely to create a 5G ecosystem in a timely manner. Through acceleration of the standardization and standard-compliant 5G NR trial activities, we will ensure the highly-stable 5G services."

"This important 5G standard-based trial collaboration will demonstrate the compliance to 3GPP and support an accelerated commercialization of the global 3GPP 5G specification," said Ulf Ewaldsson, senior vice president and chief technology officer, Ericsson. "Ericsson is working with leading operators and ecosystem players in 5G such as NTT DOCOMO and Qualcomm Technologies to enable global scale and to drive the industry in one direction."

The interoperability testing and trials, which will launch in Japan starting in the first half of 2018, are intended to track closely with, as well as help accelerate, the first 3GPP 5G NR specification that will be part of Release 15 – the global 5G standard that will make use of both sub-6 GHz and mmWave spectrum bands. Tracking the 3GPP specification is important because it promotes adherence and validation with the global 5G standard, accelerating the time to standard-compliant

devices and infrastructure. It will also drive forward compatibility to future 3GPP 5G NR releases.

About Qualcomm

Qualcomm's technologies powered the smartphone revolution and connected billions of people. We pioneered 3G and 4G – and now we are leading the way to 5G and a new era of intelligent, connected devices. Our products are revolutionizing industries, including automotive, computing, IoT, healthcare and data center, and are allowing millions of devices to connect with each other in ways never before imagined. Qualcomm Incorporated includes our licensing business, QTL, and the vast majority of our patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, all of our engineering, research and development functions, and all of our products and services businesses, including, our QCT semiconductor business. For more information, visit Qualcomm's [website](#), [OnQ blog](#), [Twitter](#) and [Facebook](#) pages.

About NTT DOCOMO

NTT DOCOMO provides innovative, convenient and secure mobile services that enable smarter living for each customer. The company serves over 65 million mobile customers in Japan via advanced wireless networks, including a nationwide 3G network and one of the world's first commercial LTE networks. Leveraging its unique capabilities as a mobile operator, DOCOMO is a leading developer of cutting-edge technologies for NFC mobile payments, mobile GPS, mobile TV, intuitive mobile assistance, environmental monitoring, smart grids and much more. Overseas, the company provides technical and operational expertise to eight mobile operators and other partner companies. NTT DOCOMO is listed on the Tokyo (9437) and New York (DCM) stock exchanges. Please visit <https://www.nttdocomo.co.jp/english/> for more information.

About Ericsson

Ericsson is a world leader in communications technology and services with headquarters in Stockholm, Sweden. Our organization consists of more than 111,000 experts who have provided customers in 180 countries with innovative solutions and services. Together we are building a more connected future where anyone and any industry is empowered to reach their full potential. Net sales in 2016 were SEK 222.6 billion (USD 24.5 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York. Read more on www.ericsson.com.

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