

# GLOBAL CONNECTIVITY

## 5G:HAUS MULTI-VENDOR COOPERATIONS ARE BRINGING INTEROPERABLE 5G CLOSER TO PRIME TIME



5G is the next generation of communications networks designed to serve the smart digital society. By delivering extreme broadband, ultra-robust low latency connectivity and massive Internet of Things networking, 5G will transform our lives, our businesses and our society. Working intensively with customers and industry partners, Deutsche Telekom is at the forefront of the development of the 5G standard. In December 2017, the 3rd Generation Partnership Project (3GPP) approved the first implementable specification for the 5G New Radio standard. Now Deutsche Telekom is driving early industry engagement on multi-vendor interoperability to bring 5G closer to reality.

In 2017 the new communications standard 5G moved from the labs to the city streets. Deutsche Telekom's 5G:haus innovation lab was to the fore, demonstrating the technology in different scenarios and in different spectrum bands. Whether it was joint testing of federated 5G network slicing across continents with SK Telecom, or the live implementation of a pre-standard 5G New Radio (NR) connection in a real-world setting in Berlin, Deutsche Telekom's technology trials have strongly contributed to the 5G development and standards process.

### GLOBAL CONNECTIVITY FACTS AT A GLANCE

- Focus on first 3GPP's first implementable specification for the 5G NR standard
- One global standard for scale and worldwide reach
- Early multi-vendor engagement advances 5G ecosystem maturity.
- Deutsche Telekom drives interoperability testing to ensure equipment availability.
- 5G:haus field trials on commercial sites to follow in 2018
- Builds on Deutsche Telekom 5G:haus innovation and leadership in 5G development



**LIFE IS FOR SHARING.**



At the end of 2017, the 3GPP unveiled the first implementable specification for 5G NR. This is a significant milestone, because it means that chipset vendors can now design the silicon based upon this specification that will power 5G equipment.

Our 5G Global Connectivity showcase at MWC 2018 highlights the diverse 5G:haus cooperations with industry partners – suppliers and chipset vendors – focusing on the development of a truly global, interoperable specification compliant 5G NR. This will pave the way to the large-scale trials on commercial sites with 5G hardware as it becomes available later in 2018. Early direct engagement with industry ensures that, ultimately, Deutsche Telekom will bring the best experience to our customers when 5G is rolled out from 2020.

### DEUTSCHE TELEKOM DRIVES 5G DEVELOPMENT WITH PARTNERS

The research and technical development work on 5G is at an advanced stage – with Deutsche Telekom as an innovation driver. In 2015, Deutsche Telekom launched the 5G:haus innovation lab to collaborate with leading industry partners and customers on the testing and evaluation of 5G technologies. With this approach,

Deutsche Telekom can more effectively drive and shape 5G specification and standardization in the special industry work-groups where global standards are agreed.

### EUROPE'S FIRST 5G CONNECTION IN FIELD ENVIRONMENT

In September 2017, Deutsche Telekom was the first in Europe to implement a live 5G connection in a real world setting. Using pre-standard 5G New Radio (5G NR), the network achieved throughput of more than two gigabits per second to a single customer device, as well as a latency of three milliseconds on commercial sites in Berlin's Schöneberg district.

Powered by Huawei user equipment closely mirroring the 3GPP specifications for 5G New Radio (NR), the deployment on commercial sites, was later extended to four cells and three sites. This 5G:haus achievement demonstrated the feasibility of Deutsche Telekom's plans to deliver a superior, new customer experience based on 5G. In Berlin, the network's high performance was showcased using augmented reality (AR) and virtual reality (VR) applications that benefit from 5G's super high data rates and real-time responses.

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