

## Press release

### Nokia and Telefónica Germany agree common “Early 5G Innovation Cluster”

- Lab testing in Munich and field trials currently planned in Berlin will address the demands for greater capacity and performance on the path to 5G
- Focus on 4.5G, 4.9G and 5G, including Massive MIMO, Edge Cloud and active antenna technology

January 31, 2018

**Munich, Germany – Nokia and Telefónica Germany today signed a Memorandum of Understanding (MoU) about a joint 5G Innovation Cluster. Both companies have agreed to test network solutions and technologies on the path to 5G in Telefónica’s lab in Munich. This will be followed by trials in the operator’s live network, currently planned with priority in Berlin with the objective of building a benchmark network with 4.5G, 4.9G and 5G technology, providing the best user experience to Telefónica’s customers.**

Nokia’s 4.5G, 4.9G technologies deliver advances such as increased speed, capacity and improved latency, providing a clear path to 5G. Under the agreement, Nokia will focus on trials that maximize the use of existing network assets and help Telefónica to meet the evolving demand and explore new business opportunities.

Key technologies to be implemented by Nokia in the Innovation Cluster include Massive MIMO for high-throughput, multi-access Edge Computing (MEC) for Ultra-Reliable Low latency Communications (URLLC). URLLC is required by critical machine-to-machine type communications in factories and for autonomous driving. Another main focus is to deliver an immersive virtual reality video experience e. g. in stadiums or at touristic sites.

**Cayetano Carbajo, CTO, Telefónica Germany said:** “Our innovation collaboration in Germany follows a global agreement with Nokia to explore technologies on the path to 5G. Having access to Nokia’s latest portfolio will enable pre-testing and understanding new technologies thus helping us to further enhance the user experience in our network.”

**Marc Rouanne, President of Mobile Networks, Nokia added:** “This joint Innovation Cluster is a manifest of our long-standing excellent relationship. We have a strong presence in Telefónica’s radio network in Germany and it is important that we work jointly to innovate on the path to 5G, preparing the network for future demand and business opportunities.”

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### About Telefónica

Telefónica Deutschland Holding AG is listed on the Frankfurt Stock Exchange in the Prime Standard (TecDax). With its subsidiary Telefónica Germany GmbH & Co. OHG, the company is operationally active in the private and business customer areas. With its brand O2 as well as various secondary and partner brands, the company offers postpaid and prepaid mobile telecommunications products as well as innovative mobile data services based on the latest mobile telecommunications technologies such as LTE. As an integrated communications provider in the area of fixed networks, it also offers telephony and high-speed internet products for private customers as well as innovative IP telephony and networking solutions for business customers. With 52.9 million lines (as of 30 September 2017), the company is one of the three leading integrated telecommunications providers in Germany. In the mobile segment alone, Telefónica Deutschland is responsible for 48.4 million lines – making it the German market leader. Revenue in financial year 2016 totalled EUR 7.50 billion. Telefónica Deutschland is part of the Spanish telecommunications group Telefónica S.A., headquartered in Madrid. With a presence in 21 countries and a customer base of about 345 million lines, Telefónica Group is one of the largest telecommunications companies around the world.

### About Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry's most complete, end-to-end portfolio of products, services and licensing.

From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in digital health, we are shaping the future of technology to transform the human experience.

[www.nokia.com](http://www.nokia.com)

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