

Vodafone demonstrates 5G and announces Voice over LTE roll-out

- **5G Made in Germany: Vodafone demonstrates the future of mobile communications**
- **Optimised telephony: Vodafone rolls out Voice over LTE technology throughout Germany**
- **Modernisation: Customers are already benefitting from Germany's most modern network**

Düsseldorf/Hanover, 15 March 2015 – Vodafone will be providing visitors to CeBIT 2015 with a glimpse of the mobile communications future – and showing them how German research is driving developments. Düsseldorf-based Vodafone Germany is presenting 5G 'Made in Germany' in conjunction with the Vodafone Chair of Mobile Communication Systems. It's a mega-fast network that can achieve data transmission rates of more than 10 gbps. Vodafone will also be rolling out Voice over LTE in Hanover, making it the first German carrier to create the framework for a nationwide All-IP network in Germany. This new technology offers customers an unprecedented voice service and telephony experience.

"5G will spearhead the digital transformation of our industrial landscape and society," said Jens Schulte-Bockum, CEO of Vodafone Germany. "The new real-time internet will make autonomous driving, remote surgery and genuine virtual classrooms possible. At CeBIT we will be demonstrating to public how Germany leads the field in pioneering 5G mobile communications research."

By 2020 5G will have gone live and be delivering speeds of up to 1 gbps. By 2030 the new technology will be around 1,000 times faster than LTE. At that speed it will be possible to download 45 terabyte YouTube movies in 60 minutes. Yet speed isn't the only advantage of 5G. It also has an ultra-low latency of just one millisecond, bringing the internet closer to the real world where response times of just one millisecond are perceived by people as genuine real time. 5G will take communications to a brand new level when, in a few years' time, it will realise networks capable of providing zero-distance connectivity between people and billions of connected machines. With 5G, smart glasses and wearables will finally come into their own. Robots and autonomous cars will leave the realm of science fiction and become part of our everyday lives. Germany is driving 5G development at the 5G Lab Germany, which is affiliated to the Vodafone Chair of Mobile Communication Systems. The lab has more than 500 employees working on the development of the next generation network.

Vodafone is also continuously improving its state-of-the-art infrastructure to optimise the customer experience, which is why it has become the first German carrier to roll out Voice over LTE. Now Vodafone customers can enjoy first-rate quality voice services in Germany's most modern wireless network. It takes a mere two seconds to connect calls after dialling a number or clicking on a contact. And the voice quality is so crystal clear it sounds as if the person at the other end of the call is standing right next to the caller. This quality is available nationwide in the Vodafone LTE network, which already covers over 70% of Germany's surface area. Voice over LTE technology takes up less space in the base stations, which means the cooling requirements are lower and energy savings of up to 30% per base station can be achieved.

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The new technology is also kind to phone batteries because the 4G network can be used for all Voice over LTE calls. This practically eliminates the energy-intensive switch over into the 2G or 3G network for voice communications. Vodafone will soon be launching new LTE smartphones for VoLTE, and the range also includes VoLTE-capable smartphones by manufacturers such as Samsung, Sony and HTC. Voice over LTE is a central component of the most powerful and efficient All-IP network.

Vodafone's network upgrade and modernisation programme has substantially improved voice quality and data transmission rates in its GSM (2G) and UMTS (3G) network. Over 60 percent of the entire network was modernised last year. That's around 16,000 km of German motorways, two-thirds of all German cities and more than half of the premiere league football stadiums, plus many other places. Customers can definitely tell the difference, with a call connection rate of 99.5 percent and fast call connection times of around seven seconds. Independent tests additionally confirm the modernisation programme's success. In the latest connect network test, Vodafone is the carrier with the best voice network in German cities, and the only carrier to have substantially improved its test rating since the previous year.

Vodafone is collaborating with some of the planet's most intelligent people on 5G research projects. Take a look at our **5G network video** at:

<http://www.vodafone.de/unternehmen/presse/pressemappe-cebit-2015.html>

Vodafone is exhibiting in Pavilion 32 again at this year's CeBIT from 16 to 20 March 2015, where will be showcasing a comprehensive range of products for German and international enterprise customers. You can find further CeBIT information for the media at www.vodafone.de/presse. The new Vodafone online magazine www.featured.de/business also provides comprehensive information about Vodafone Germany's enterprise business.



Vodafone Germany

Vodafone Germany is one of the largest and most modern telecommunication services providers in Europe. It realises turnover of more than 9.8 billion euros (together with Kabel Deutschland) and has 10,500 employees. Based in Düsseldorf, Vodafone Germany is a one-stop innovative and integrated technology and service provider with a portfolio including mobile communications, fixed network telephony, internet and broadband data services for enterprise customers and private consumers. Continuous development, numerous patents and investments in new products, services and the modern network have made Vodafone an innovation leader in the German telecommunications market. Vodafone is committed to CSR. The German Vodafone Foundation is a socio-political think tank that initiates and supports numerous projects in the fields of education, integration and social mobility. The company is part of the Vodafone Group. Visit the website at www.vodafone-deutschland.de for further information.

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