

Press Release

Munich / Halle a. d. Saale, Germany – December 17, 2010

HD TV broadcasts via LTE pilot networks of Telefónica O2 Germany

Live pictures from the motocross track in Teutschenthal and a Segway tour in Halle

- **LTE pilot networks in Halle a. d. Saale and Teutschenthal up and running**
- **A wide range of possible uses via ultra-high speed broadband**
- **HD video conferencing and VoIP over LTE between Halle and Munich**
- **Live TV reporting from the motocross track in Teutschenthal**
- **Segway with a mobile HD camera shows pictures of Halle's Christmas market**
- **Nokia Siemens Networks has supplied the networks in the 2.6 GHz and 800 MHz frequency bands**

The LTE (Long Term Evolution) pilot networks of Telefónica O2 Germany in Halle an der Saale and Teutschenthal have been successfully put into operation. Nokia Siemens Networks started [installation of the networks](#) in September, which is now completed. LTE is a new mobile network standard that enables ultra-high speed broadband services, even in rural regions.

Yesterday, Telefónica O2 Germany gave an impressive display of what applications are possible with LTE. In an LTE videoconference, high-definition pictures were sent between Halle and Munich, without any juddering or voice delays. Calls over LTE to commercially available 2G and 3G mobile phones worked impeccably. The LTE network was particularly efficient in video streaming. A mobile reporter commentated live from the motocross track in Teutschenthal, where the world championships will be held next year. The images were sent in high definition (HD) at around 20 Mbit/s and with duplex VoIP to Munich. And a Segway fitted with mobile HD cameras toured the city center of Halle, showing pictures of the Christmas market in top HD quality via LTE.

The LTE pilot network for Telefónica O2 Germany in Halle and Teutschenthal is operated and run by Nokia Siemens Networks and can now be tested by hundreds of friendly users free of charge. Data is transported in Halle over the 2.6 GHz frequency band and in Teutschenthal over the 800 MHz band, also known as "digital dividend" because it used to be the frequency band for analog television. The network comprises a total of 17 locations in Halle and three in Teutschenthal. It consists of Nokia Siemens Networks' Flexi Multiradio Base Station and Evolved Packet Core (EPC) with Flexi NG (Network Gateway) and Flexi NS (Network Server).

"In particular, the video images broadcast showed how fast LTE is and what high quality can be achieved. Efficient broadband connection is vital to a region's economic development. LTE allows us to supply rural areas that used to lack a high-speed Internet connection and by doing so improve broadband coverage in Germany as a whole," said Andrea Folgueiras, CTO of Telefónica O2 Germany.

LTE delivers very high data transmission rates – up to 100 Mbit/s are now possible with the first generation of LTE end-user devices. A video of 7.5 MB in size, for example, can be downloaded in less than a second via LTE;. LTE also offers short latency of just ten to twenty milliseconds. As a result, online games are a real enjoyment.

“We demonstrated live from Halle and Teutschenthal that LTE opens up new possibilities for consumers,” said Thomas Riedel from Nokia Siemens Networks, who is in charge of business with Telefónica in Germany, Slovakia and the Czech Republic. “This means that TV companies will be able to report live on sports events that previously did not have broadband Internet access.”

With its award-winning, energy-efficient Flexi Multiradio Base Station – which has already been shipped to more than 200 carriers worldwide – and its comprehensive network concept, Nokia Siemens Networks is the technological leader in the LTE market. The company has also signed 22 commercial LTE contracts worldwide and is committed to creating next-generation networks.

About Telefónica O2 Germany GmbH & Co. OHG

Telefónica O2 Germany GmbH & Co. OHG belongs to Telefónica Europe and is part of the Spanish telecommunication group Telefónica S.A. The Company offers its German private and business customers postpaid and prepaid mobile telecom products as well as innovative mobile data services based on the GPRS and UMTS technologies. In addition, the integrated communications provider also offers DSL fixed network telephony and high-speed internet. Telefónica Europe has about 55 million mobile and fixed network customers in Great Britain, Ireland, the Czech Republic, Slovakia and Germany.

About Nokia Siemens Networks

Nokia Siemens Networks is a leading global enabler of telecommunications services. With its focus on innovation and sustainability, the company provides a complete portfolio of mobile, fixed and converged network technology, as well as professional services including consultancy and systems integration, deployment, maintenance and managed services. It is one of the largest telecommunications hardware, software and professional services companies in the world. Operating in 150 countries, its headquarters are in Espoo, Finland. www.nokiasiemensnetworks.com

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