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5G in practical test: Temporary network at the Festival of Lights

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At the 10th FOKUS Fuseco Forum (FFF), the FOKUS researchers will present a field trial with a portable 5G network, which they carried out with partners at the Berlin Festival of Lights. The FFF will take place on November 7th and 8th in Berlin. During these two days, international telecommunications experts from science, business and politics will discuss trends and challenges in the use of 5G.

Whether disaster relief, sports event or festival: 5G can be used to set up a temporary network to connect many devices and provide a high bandwidth for multimedia services. In order to test such a setup, researchers from Fraunhofer FOKUS conducted a field trial as part of the EU project 5Genesis with partners from the Leibniz Institute Innovations for High Performance Microelectronics (IHP), Humboldt-Universität zu Berlin, Karlstads Universitet, NetApp and Simula at this year's Festival of Lights in Berlin on October 18 and 19.

The field test took place in front of the main building of Humboldt-Universität zu Berlin, one of the festival's main squares. A 180 degree camera recorded the surrounding light installations on both evenings. Instead of sending the data to a central cloud, the videos were transmitted via a 60 Ghz antenna to an "Edge Cloud", which was located in a van on site. "Processing data at the edge" has a couple of advantages, like data being processed faster due to the shorter transmission paths. The Edge Cloud consisted of NetApp's "hyperconvergent infrastructure" (HCI), which tightly integrates computing power and storage, Simula's application software and Fraunhofer FOKUS' Open5GCore software for a virtualized core network. In addition to radio technology, the core network is the key component of a 5G network, because it controls communication. For example, the core network is used for authentication, mobility management and control of the communication links between the end devices and services.

A web app from the partner Simula made it possible to watch the light installations on a smartphone.

Project manager Marc Emmelmann from Fraunhofer FOKUS sums up: "The 5G network offers much potential: several hundred thousand users per square kilometer can be networked and transfer rates of up to 10 Gigabit per second can be realized. This enables new services for festival visitors, but also for people who cannot attend the event. The field test has shown that it is possible to dynamically set up a 5G core network on site for local use in just a few minutes and to support end applications with low network loads and high computing capacities on the basis of a powerful, mobile infrastructure in the Edge."



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More information

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