



Press Note

TIM carried out in Turin the world's first test of “Full Duplex Relay”, which can double the capacity of the LTE network in view of 5G

Rome, 22 January 2016

Tim was the first in the world to test the Full Duplex Relay technology which doubles the transmission capacity of the current LTE network and in the future that of 5G.

The test, carried out in the vicinity of the city of Turin, in collaboration with the American start-up Kumu Networks, enabled the self-backhauled small cell 4G with Full Duplex technology solution to be tested in a live environment, thanks to which a smart repeater is capable of transmitting and receiving a mobile signal on the same frequency, thereby doubling the transmission capacity of the network.

This solution will allow mobile transmissions in downlink and uplink to travel at the same time, even if of different intensities, and it is also applicable on the current 4G networks with the use of small cells in areas where there is no traditional backhaul solution available.

Kumu Networks has developed this innovative technology which allows the self-interference of the mobile signal to be overcome and the efficiency of the radio spectrum to be doubled. Full Duplex is in fact recognized at international level as one of the most important and promising systems to enable the 5G network. The testing was first demonstrated last June in a laboratory in Turin, at TIM's TILab.

“We are very happy to announce this first “live” test. TIM has once again shown its ability and commitment to contributing to continuous global innovation, and confirmed its leadership position in research and development on new generation ultrabroadband - declares Gabriela Styf Sjoman, Head of TIM’s Engineering & TILAB - 5G is a key network evolution towards more advanced Digital Services and we are not only committed to defining the standards, but also to contributing to key research and development initiatives that will be fundamental for a healthy eco-system in Digital Services, including the network, open platforms and services. Turin is fundamental in contributing to the research of such eco-system and once again capital of innovation thanks to the collaboration with the universities and some of the most advanced sector companies”.

From 2020 5G will introduce new services to the market, not only for *person to person* communications but also for communication between the millions of sensors connecting things to the Internet. 5G technology is characterized not only for its speed which in the future will be able to reach maximum peaks in the order of tens of Gbit/s (hundreds of times greater than 4G), but also for its capacity to connect up to hundreds of thousands of devices per square kilometre with extremely low latency, to the millisecond.

TIM is the single brand name for the whole Telecom Italia Group, which operates in the market through a strategy of shared value for the company and the community, offering fixed and mobile telephony, Internet, digital content and cloud services. TIM, the enabler of the most innovative information and communication technology, is accompanying Italy towards the objective of total digitalisation, by creating ultrabroadband network infrastructure and disseminating latest generation services.

Telecom Italia Press Office
+39 06 3688 2610
www.telecomitalia.com/media

Telecom Italia S.p.A.

Registered Office: Via Gaetano Negri, 1 - 20123 Milan

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Share Capital € 10,740,236,908.50 fully paid up Certified e-mail address [Casella PEC]: telecomitalia@pec.telecomitalia.it