

Telefónica and Huawei Completed the World's First Proof-of-Concept Test for 5G UCNC Radio Access Networks

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- It is a new milestone with the world's first PoC (proof-of-concept) about 5G UCNC (user centric and no cell) RAN (radio access network) architecture.

[Madrid, Spain, November 17, 2016] Telefónica and Huawei have achieved a new milestone with the world's first PoC (proof-of-concept) about 5G UCNC (user centric and no cell) RAN (radio access network) architecture, tested in the 5G Joint Innovation Lab. 5G UCNC is part of the 5G innovation projects that both companies signed as a "5G&NG-RAN Joint Innovation Agreement" in June 2016.



Providing ubiquitous ultra-fast end user experience everywhere is one of the challenges for 5G commercial networks deployment. Huawei innovated the CloudRAN™-based UCNC with Hyper-Cell network architecture, thus enabling the large-area coordination of many base station nodes to eliminate handovers between cells and reduce interference from adjacent cells. Re-architecting the traditional cell-centric principle towards a user-centric access aims to ensure a consistent user experience across the network.

UCNC is a novel radio access framework evolved from the classical cell-centric access protocol to a user-centric protocol with hyper-cell abstraction. UCNC can dramatically reduce the over-the-air protocol signaling overhead and the access protocol latency,

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as well as increase the number of air-interface connection links. UCNC also defines the “ECO State” as a new device protocol state for sending short packets directly without the need of over-the-air signaling, thus making users be truly “always connected”. Another key technology is “SCMA-based Grant Free Access”, which can simplify uplink access procedures so as to reduce latency and increase the number of connected devices. According to the results of PoC tests conducted at Telefónica-Huawei 5G joint lab, the number of 5G connections per cell increased by 233%, the signaling overhead decreased by 78%, and the latency decreased by 95% compared with state-of-the-art LTE. Telefónica and Huawei will continue with the next phase PoC test with the target to enhance the cell edge spectral efficiency, in order to avoid end-user experience degradation at the cell edges and any service interruption across the network.

In addition to the UCNC PoC tests, Huawei and Telefónica successfully demonstrated the mmWave Multi-User MIMO technology based on 5G NR (New Radio) and Massive MIMO TDD technology. 70Gbps cell throughput was reached by mmWave Multi-User MIMO by delivering more than 35Gbps data rate to each user, which is 100 times faster compared to LTE today.

Mr. Enrique Blanco, Telefónica Global CTO, said: “Telefónica collaboration with Huawei on 5G has allowed us to reach disruptive results like the use of User Centric No Cell eliminating handover between cells and reducing interference, which is a significant step towards making 5G a really differential mobile system. With this PoC, included in the trial activities of Telefónica in 5G, we can highlight the progress towards developing new technological elements of 5G that provide an important opportunity to position 5G as a transformative element for all services and applications that depend on excellent connectivity.”

Dr. Tong Wen, Huawei Fellow and Huawei Wireless CTO, said: “We are pleased with our 5G collaboration with Telefónica. Our joint achievement on the Proof-of-Concept UCNC for NR RAN and trials for the fiber-like mmWave technology will pave the way from 5G innovation to commercial reality. The novel RAN architecture concept based on the cloud technology will lay the foundation for the future 5G services and applications.”

Telefónica is one of the largest telecommunications companies in the world by market capitalization and number of customers with a comprehensive offering and quality of connectivity that is delivered over world class fixed, mobile and broadband networks. As a growing company it prides itself on providing a differential experience based both on its corporate values and a public position that defends customer interests.

The company has a significant presence in 21 countries and 349 million accesses around the world. Telefónica has a strong presence in Spain, Europe and Latin America, where the company focuses an important part of its growth strategy.

Telefónica is a 100% listed company, with more than 1.5 million direct shareholders. Its share capital currently comprises 4,900,571,209 ordinary shares traded on the Spanish Stock Market and on those in London, New York, Lima, and Buenos Aires.

About Huawei

Huawei is a leading global information and communications technology (ICT) solutions provider. Our aim is to build a better connected world, acting as a responsible corporate citizen, innovative enabler for the information society, and collaborative contributor to the industry. Driven by customer-centric innovation and open partnerships, Huawei has established an end-to-end ICT solutions portfolio that gives customers competitive advantages in telecom and enterprise networks, devices and cloud computing. Huawei's 170,000 employees worldwide are committed to creating maximum value for telecom operators, enterprises and consumers. Our innovative ICT solutions, products and services are used in more than 170 countries and regions, serving over one-third of the world's population. Founded in 1987, Huawei is a private company fully owned by its employees.

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