Press Release

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IHP announces 5G-CLARITY project for providing multi-connectivity in future private networks

IHP coordinates this 5G-PPP Project with European industrial and academic partners to develop beyond 5G multi-access private networks

Frankfurt (Oder). IHP – Innovations for High Performance Microelectronics today announced 5G-CLARITY, a joint effort with a consortium of 12 partners in Europe to develop automated solutions powered by artificial intelligence for beyond 5G private networks integrating multiple wireless access technologies and their evolutions from 3GPP 5G New Radio, IEEE 802.11 Wi-Fi, and IEEE 802.11 LiFi.

IHP is the project coordinator and leads the integration of multi-connectivity Radio Access Technologies towards the joint development of localization techniques with the goal of achieving centimetre precision. This role underscores the importance of IHP´s focus on wireless innovation for the provision of location-based services, and its commitment to deliver technologies that benefit the entire wireless industry for both public and non-public networks based on 3GPP and IEEE 802.11 standards. “IHP is honored to be a part of this pioneering project that will lay the foundations for smart multi-access private networks in the 5G and beyond era,” said Dr. Jesús Gutiérrez, 5G-CLARITY project coordinator and project leader at IHP.

The solutions targeted by 5G-CLARITY project sits on three main innovation pillars: 1) Evolutions of current 3GPP 5G New Radio towards enhancements of non-public networks in future 3GPP releases; 2) Seamless integration of 5G New Radio and its evolution with the IEEE 802.11 technologies, including both Wi-Fi and LiFi; and 3) Incorporation of artificial intelligence techniques for self-organization and autonomic management of the multi-access private network.

These innovations target significant performance improvements including 1) downlink user experienced data rates above 1 Gbps; 2) air interface latency below 1 ms for uplink and downlink; 3) reliability above 99.9999 %, 4) positioning accuracy below 1 cm at peak, and 5) synchronization to nano-seconds level.

The solutions will be demonstrated and trialed in two private network testbeds: a smart factory environment by Bosch near Barcelona in Spain, and a museum environment by 5G UK in Bristol in the UK.

The consortium comprises 12 partners, including IHP, Accelleran, Bosch, Ericsson LMI, Gigasys Solutions, i2CAT (Fundació Privada Internet i Innovació Digital a Catalunya), InterDigital Europe, pureLifi, Telefonica, University of Bristol, University of Edinburgh, and University of Granada. The 30-month project, which began November 1st, 2019, received a total of 5.75M€ in funding from the European Commission.

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Project team at the kick-off meeting at IHP in Frankfurt (Oder). © IHP 2020

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About IHP:
IHP is an institute of the Leibniz Association and conducts research and development of silicon-based systems and ultrahigh frequency circuits and technologies including new materials. It develops innovative solutions for application areas such as wireless and broadband communication, security, medical technology, industry 4.0, automotive industry, and aerospace. IHP employs approximately 300 people. It operates a pilot line for technological developments and the preparation of high-speed circuits with 0.13/0.25 µm BiCMOS technologies, located in a 1000 m² class 1 cleanroom.

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