

IEEE International Conference on Communications 21-25 May 2017 // Paris // France

Workshop on Full-Duplex Communications for Future Wireless Networks

## Workshop on Full-Duplex Communications for Future Wireless Networks

The emerging 5th generation and beyond wireless systems will experience a significant increase on the number of connected devices and high volume of data traffic. Additionally, high traffic load variations among heterogeneous network cells over time pose an extra challenge, due to the possible asymmetric traffic and dynamics between the uplink and downlink communications. Full-duplex (FD) technology, by which devices transmit and receive simultaneously on the same frequency band, have attracted a lot of research attention lately. FD radios can potentially double the spectral efficiency and therefore are a promising technology for future wireless network. However, FD radios suffer from severe self-interference (SI), as well as extra cross interference between the uplink and downlink caused by simultaneous transmissions which further degrades the overall network performance. To this end, many research groups around the world have proposed new transceiver designs, implemented advanced FD prototypes and have shown that SI can be mitigated almost up to the noise floor. Recently, some field trials have also been completed in order to bring FD technology a step closer to practice. All these accomplishments show the feasibility of FD and its applicability for future wireless networks. Despite these fundamental results and achievements, still there are many challenges and open problems to resolve on FD operation. In order to achieve the full potential of FD transmission, it is necessary to cope with the self-interference and develop new mechanisms and efficient protocols, while reducing the energy consumption due to the required additional hardware.

### [Keynotes](#)

#### [Full-Duplex MIMO – Prospects and Enabling Technologies](#)

Yang-seok Choi and Shilpa Talwar, Intel, USA

#### [Full Duplex Wireless: From Fundamental Physics and Integrated Circuits to Complex Systems and Networking](#)

Prof. Harish Krishnaswamy, Columbia University, USA

### Important Dates

Notification Date: 17 February 2017

Final Paper: 10 March 2017

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