IEEE Global Conference on Signal and Information Processing - Symposium on Transceivers and Signal Processing for 5G Wireless and mm-Wave Systems

Call for Papers

Wireless communications networks and associated devices are currently under intensive research as cellular networks are moving from 3G/4G towards the 5G era. Significant technological advances are required to meet the demand for increased data rates, substantially reduced latencies, support for a massive number of simultaneous devices, increased energy efficiency, and QoS guarantees.

Some of the most promising approaches for meeting the new requirements include the adoption of cmWave and mmWave frequencies, cognitive radio and other intelligent and flexible methods for RF spectrum use, device centric network architecture, massive MIMO, cooperative network wide multipoint processing, core network virtualization and reconsideration of the data, control and management planes.

Meeting the 5G demands is tied to the computational platforms of base stations and devices on which the cellular network is built. Recent advances in computing solutions, such as heterogeneous, data parallel and reconfigurable platforms, together with technological advances in analog, mixed-signal and digital circuits provide the means for developing efficient, yet flexible computation platforms. At the same time, the constantly increasing complexity of wireless communications solutions and underlying processing platforms mandatorily requires advances in design methodologies, high-level programming languages and tools. Hence, development and innovation of concrete 5G solutions requires experts from both wireless communications, and design and implementation communities.

To this end, the symposium provides a platform for the dissemination of research on topics of interest but not limited to the following.

- Software-defined and cognitive radio
- Technologies, circuits and algorithms for mm-wave
- mm-wave access networks and mobile back/front-haul
- Sparse channel models and estimation for mm-waves
- Fast transceiver processing and A/D conversion technologies for mm-waves
- Heterogeneous and small cell networks
- Massive MIMO, particularly signal processing and hardware challenges
- Cloud radio access networks and their computation and design challenges
- Optimization of radio resource management solutions and algorithms
- Advanced solutions for flexible spectrum access: including full-duplex, flexible FDD and dynamic TDD
- Advanced solutions for low-latency communications
- Optimization of transceiver algorithms
- Signal processing solutions against RF imperfections
- Design and implementation of wireless transceiver functionalities on programmable heterogeneous and multicore platforms
- FPGA and VLSI implementations of wireless transceiver functionalities
- Design methodologies and tools for wireless transceiver design
- Algorithm design / optimization and implementation codesign

The symposium welcomes papers with up to four pages for technical content including figures and with one optional 5th page containing references only. Manuscripts should be original and in the IEEE double-column format. Paper submission through http://2016.ieeeglobalsip.org/Papers.asp.

Papers are due **June 20**, 2016 with acceptance decisions expected August 5, 2016

The IEEE Global Conference on Signal and Information Processing is a new flagship IEEE Signal Processing Society conference. It will focus on signal and information processing and up-and-coming signal processing themes. GlobalSIP is comprised of symposia selected based on responses to the call-for-symposia proposals.