

Special Session for QSHINE 2015

Call for Papers

Title

5G Communication Architecture and Technology

Description

It is predicted that in 2020 there will be billions of heterogeneous devices relying on cellular networks for data exchanges. The capabilities offered by fourth generation (4G) networks, currently being deployed worldwide, where each device is capable of achieving data rates from the order of hundreds Mbps to several Gbps, will not be enough to service the projected amount of connected devices. Furthermore, it is expected a ten to thousand-fold increase in number of devices and traffic volume in 2020. To be able to address such an unprecedented challenge, we should explore all the frontiers of human knowledge and potential technologies. This is the motivation that envisions the fifth generation (5G) communication networks. To support challenging massive and high-speed connections in 5G networks, different design principles have been widely discussed. In addition to the spectrum efficiency, network/energy efficiency, information management, universal service and user experiences should be jointly optimized, which will lead to a variety of solutions. Considering the limited time left to tackle these critical 2020 challenges, it is now time to move forward. The purpose of this special session is to bring together state-of-the-art technologies, research activities (both in academia and industry), and the corresponding standardization impacts, so to understand the requirements and the promising technical options towards the realization of the 5G networks.

Topics of interest (includes but not limited to)

- Heterogeneous cloud radio access networks for 5G communications
- Cognitive radio and software network technologies
- Advanced multiple access designs for 5G networks
- Heterogeneous networking architecture and protocol stack designs for 5G networks
- Machine-to-machine, device-to-device, and vehicle-to-vehicle communications
- Distributed antennas, network coding, and advanced link/network adaptation techniques
- Radio/network resource, energy, traffic, and information managements for 5G networks
- Resilience, self-organization, and reconfigurable designs for 5G networks
- 5G networks in unmanned/complex/intelligent systems (e.g., energy harvesting, cyber-physical,...)
- Navigation, positioning, mobility tracking, and social connection in 5G networks
- Standardizations for 5G networks
- Impacts of innovative technologies (e.g, wireless charging, wearable devices,...) to 5G networks

Important Dates

Paper submission due: May 15th, 2015

Camera-ready paper: Jun. 10th, 2015

Paper Submission

- All submissions should follow the guidelines at <http://qshine.org/2015/show/initial-submission>
- For this special session submission, please choose “5G Communication Architecture and Technology” track when uploading the manuscript.
- Questions about submitting manuscripts or special session related issues can be sent to Prof. Shao-Yu Lien (sylien@nfu.edu.tw)