With the envisioned 1000x explosion in mobile data traffic by the end of year 2020, the wireless network architecture needs to evolve rapidly. The evolution trajectory should be charted such that exponential gains can be harnessed in network-wide resource efficiency. This requires a clean slate design for the 5G wireless networks while provisioning interoperability with the legacy deployment. Thus, it has been realized that 5G will not be a rebranded version of 4G which will merely provision faster data transfers. The 5G networks will be more dynamic due to heterogeneity in terms of devices, spectral bands, technologies and deployment models. The so-called concept of a "tactile internet" with these heterogeneous network elements cannot be realized without adequate advancements in signal processing and communication algorithms. To this end, the main objective of this Special Session is to provide a platform for dissemination of recent advancements in the signal processing techniques for enabling large-scale heterogeneous 5G wireless networks.

This Special Session is to present recent advances in signal processing for communication with an emphasis on signal processing techniques that may be relevant for emerging 5G networks. Submissions of both application specific technical contributions and comprehensive design tutorials are encouraged. Original papers with significant novelty and originality in aspects of signal processing are solicited for this Special Session.

Topics
(Include but not limited to the following)
- New modulation, coding and waveforms design
- Hardware implementation of signal processing algorithms
- Machine learning empowered signal processing for context aware 5G applications
- Signal processing for location-aware communications (e.g., D2D, smart spaces, etc.)
- Signal processing techniques for sensing and inference in 5G sensor networks (e.g., M2M, IoT, etc.)
- Signal processing for Energy efficient large scale systems
- Signal processing tools for large scale stochastic networks and their limiting behavior (RMT)
- Signal processing for high higher frequency bands (e.g., VLC, mm-wave, 60GHz, etc.)
- Signal processing for Full duplex wireless communication
- Signal processing for data storage and management in large-scale 5G networks
- Application in 5G systems with advanced signal processing approaches
- Advantage of next-generation memory (e.g., Non-volatile memory) in big data processing and machine learning
- Scalable checkpointing for fault tolerance by taking advantage of next-generation memory (e.g., Non-volatile memory)

- Submission deadline: 15 June 2019
- Acceptance notification: 30 June 2019
- Registration and camera-ready version: 15 July 2019
- Conference date: 25-27 September 2019

Special Session Co-Chairs
Fakhreddine Ghaffari
University of Cergy-Pontoise, France
Nguyen Duc Phuc
PTIT, Vietnam
Le Trung Khoa
Huawei Technologies, Paris, France

Technical Program Committee
Sunghwan Kim, University of Ulsan, Korea
Tran Thi Hong, Nara Institute of Science and Technology, Japan
Nguyen Van Toan, Hallym University, Korea
Nguyen Xuan Thuan, University of Toronto, Canada
Nguyen Thanh Tu, Aston University, United Kingdom
Vu Thanh Tung, University of Newcastle, Australia

Organizers:
VNU-UET
PTIT
MIC-JoICT

Technical Sponsors:

Patrons:

ISCIT Contact:
avitech@vnu.edu.vn