

Call for papers  
Special-Session on  
**Resource-Efficient, Reliable and Secure Internet of Things in  
Beyond 5G Era (IoT-B5G)**

In conjunction with IEEE CAMAD 2019 (<https://camad2019.ieee-camad.org/>)  
11-13 September 2019, Limassol, Cyprus

**Aim and Scope**

With the rapid increase in the number of connected sensors, machine-type communication (MTC) devices, and smart wearables, the market place for Internet of Things (IoT) is growing rapidly over the recent years. The emerging IoT verticals including eHealthcare, smart homes, smart grids, smart cities, connected cars, and industrial automation are expected to significantly enhance various aspects of our daily lives. It is expected that the upcoming 5G and beyond wireless technologies will be the backbone of IoT by meeting heterogeneous requirements of various IoT verticals. However, there are several challenges to be addressed to provide reliable and secure connections to the massive number of resource-constrained IoT devices. Existing communication technologies were mainly designed for human-type communications and may not be suitable for these systems due to several unique features and diverse requirements of IoT systems such as low latency, low cost, low energy consumption, high failure rate, and data transiency. To this end, it is crucial to design resource-efficient, reliable, and secure wireless communication technologies by considering various constraints imposed by heterogeneous IoT devices and systems. Moreover, effective handling of the massive amount of unstructured/semi-structured data generated by resource-constrained IoT devices through the resource-limited communications infrastructure is another crucial challenge to be addressed. In addition, due to resource-constrained nature of IoT devices, security and privacy preservation are other important aspects to be addressed in future wireless IoT systems.

This special session focuses on recent research activities in the areas of resource-efficient, reliable and secure wireless communication technologies for future wireless IoT systems, low-complexity data acquisition and Machine Learning assisted data processing techniques, edge computing and security enhancement techniques for IoT systems. In this direction, we invite researchers from academia, industries, and governmental organizations to submit their novel works on system architectures, theoretical models, system level simulations/experimental results, and hardware demonstration results in the related domains.

## Topics of interest

The main topics of interest for this special-session include, but not limited to the following:

- Communication challenges and solutions for emerging IoT verticals/systems: eHealthcare, industrial automation, smart grid, smart city, IoT via satellite and cellular IoT.
- PHY/MAC layer algorithms for supporting IoT verticals in Beyond 5G systems including massive MIMO, small cells, full duplex and mmWave systems
- Machine learning/Deep learning for wireless IoT networks
- Low-complexity distributed learning for IoT systems
- Edge computing technologies for IoT systems
- Cloud-assisted solutions for resource management in IoT systems
- Adaptive waveforms, energy harvesting, and adaptive modulation and coding techniques
- Orthogonal/non-orthogonal multiple access and access control schemes for IoT systems
- Resource allocation, dynamic spectrum sharing and interference mitigation techniques
- Energy-efficient data acquisition, reporting and fusion techniques
- Data aggregation, prioritization and offloading techniques
- SDN and virtualization techniques for IoT networks
- IoT Protocols and standards (IPv6, 6LoWPAN, RPL, 6TiSCH, oneM2M, BLE, EPCglobal, Z-Wave, LTE-M, NB-IoT and IEEE 802.11 ah)
- Security enhancement and privacy preservation techniques for IoT systems
- Blockchain and Distributed ledger technologies for IoT security
- Hardware prototype design for IoT applications

Accepted and presented papers will appear in the conference proceedings of IEEE CAMAD 2019 and will be submitted for inclusion in IEEE Xplore®.

## Important Dates

- Review paper submission: 15 June 2019
- Notification of acceptance: 20 July 2019
- Camera-ready submission: 05 August 2019

## Submission Requirements

Please refer to <https://camad2019.ieee-camad.org/authors/> for the detailed instructions on the submission format.

## Special-Session Organizers and Co-Chairs

1. Dr. Waleed Ejaz, Thomson River University, Canada
2. Dr. Shree Krishna Sharma, SnT, University of Luxembourg