

IEEE Int. Workshop on Low-Layer Implementation and Protocol Design for IoT Applications (IoT-LINK)

Washington, DC, USA, December 4th, 2016

Co-located with IEEE Global Communication Conference Exhibition & Industry Forum (GLOBECOM)

Workshop Chairs

Luca Rose (contact)

Huawei FRC, France

Tomoaki Ohtsuki

Keio University, Japan

Kemal Akkaya

Florida International
University, USA

Abolfazl Mehbodniya

Tohoku University, Japan

Publicity Chair

Axel Müller

Huawei FRC, France

Steering Committee

Robert W. Heath Jr.

Texas Austin University, USA

Mérouane Debbah

Huawei FRC, France

Tony Quek

SUTD, Singapore

Ismail Guvenc

Florida International
University, USA



The Internet of Things (IoT) is seen as the next stage of the information revolution and, with an estimated 30 billion of objects connected by 2020, it is becoming a more and more a concrete reality. IoT is capable of revolutionizing our lives through manifold applications in smart cities, smart homes, security, positioning and tracking, vehicular connectivity, and e-health.

In the beginning, most IoT research and development had focused on “application and above” network layer issues. It was treated as an afterthought to, and simple use-case of, the envisioned 5G (high speed/high complexity) radio access technology. Recently however, awareness of physical and access layer issues, tailored to the specific nature of IoT communication, has drastically increased. Furthermore, the vision of IoT has matured within both academy and telecommunication companies. Massive connection requirements and low powered devices are driving fundamental research and development into designing ad hoc PHY, MAC and NET layers for this 5G technology. Examples of yet unanswered questions surrounding the IoT technologies include: 1) Should IoT networks base their communication on an ad hoc network or exploit the potential of 5G cellular infrastructure?; 2) Should they be connectionless systems, or exploit the support of a full protocol stack?; 3) How will IoT networks interact with multiple antenna systems, and in particular with the envisaged massive-MIMO base stations deployed in 5G networks?; and 4) Should IoT devices exploit the possibilities offered by energy harvesting to prolong their battery life?

The goal of this workshop is to bring together academic and industrial researchers to discuss these questions and identify further technical challenges, such as possible network architecture, most suitable protocol stacks, and recent results related to IoT and M2M networks, as well as their applications. Topics of interest include, but are not limited to the following:

- MAC-layer and network-layer protocol design for IoT.
- PHY-layer design for low-latency and energy efficient IoT.
- Vehicular (V2X) communication design.
- Big data and machine learning techniques for deployment and optimization of IoT.
- Real world deployment and business/industry case studies for IoT and M2M.
- Implementation of cloud networking for IoT networks.
- Software defined radio (SDR) and software defined networking (SDN) for IoT.
- Different IoT solutions for wide-area communications.
- IoT physical and network layer standardization efforts in 5G.
- Security and cryptography applied to IoT.
- Multi-antenna (MIMO) oriented IoT design and solutions.
- Antenna and transceiver design for IoT.
- Performance evaluation of IoT networks.
- Energy harvesting for battery life extension of IoT equipment.

Papers should be written in English with a maximum paper length of six (6) printed pages (10 point font) including figures without incurring additional page charges (maximum 1 additional page with over length page charge of USD100 if accepted). Papers exceeding 7 pages will not be accepted at EDAS. Standard IEEE conference templates for LaTeX formats are found at here: http://www.ieee.org/conferences_events/conferences/publishing/templates.html .

Workshop webpage: <https://sites.google.com/site/ieeetiolk/home> .

Important Dates

Paper Submission

July 1st, 2016

Acceptance Notification

September 1st, 2016

Camera-Ready Due

October 1st, 2016

Keynote Speakers

Petar Popovski (Aalborg
University, Denmark)

Erik G. Larsson (Linköping
University, Sweden)

Thierry Lestable (Vice
Chairman, LoRa Alliance)