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IEEE pimrc'17

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## WORKSHOP WS-07 ON INTERNET OF THINGS (IOT), THE ROAD AHEAD: APPLICATIONS, CHALLENGES, AND SOLUTIONS

### SCOPE

For more than a decade, the Internet of Things (IoT) and its enabling services have been increasingly narrowing the gap between the physical world and cyberspace. It has been pursued mostly by making objects smarter and connecting them pervasively through different technologies. We are witnessing that IoT is revolutionizing the way we interact to our environment. There are many concepts along this road which relate to the general vision of IoT, among which we can refer to (but not limited to): smart factories, smart cities, mobile health, smart products, smart spaces, machine-to-machine (M2M) communications, intelligent transportation systems, smart manufacturing, surveillance, telemetry, industry 4.0, E-health and vehicle-to-vehicle (V2V) communications. What those concepts have in common is that they provide a platform that different smart objects and their related data are integrated to create some services.

Research activities have been ongoing in both academia and industry to pave the path towards vast deployment of IoT services and meeting their requirements. However, many issues should be addressed to enable seamless connectivity of devices, systems, and services to introduce varieties of applications. These issues include matters related to embedded sensors and smart objects, resource-constrained devices and networks, secure and robust communications for massive deployment of the sensors and devices, ultra-reliable and low-latency communications (URLLC) for the mission critical systems, data collection and analysis, IoT services and IoT techno-economics aspects, IoT platforms, just to name a few. Many standardization bodies (e.g., 3GPP, ETSI TC M2M, 6LowPAN, IETF, IEEE 802.11, IEEE 802.15, Bluetooth SIG etc.) have launched activities to support the spreading of IoT. More notably and most recently, the 3GPP has standardized narrowband-IoT (NB-IoT) to address the requirements of IoT. The purpose is to provide improved indoor coverage, support to massive number of low throughput devices, low delay sensitivity, ultra-low device cost, low device power consumption, and optimized network architecture.

Thus, the research in this area is still underway and novel solutions are needed to efficiently serve a huge number of objects and devices that interact autonomously at a global level in heterogeneous networks. The goal of this workshop is to bring experts and various state-of-the-art research activities in both academia and industry together in the forefront of IoT to present and debate trends, advanced technologies, services and applications that will make possible the integration of verticals.

### TOPICS

The range of topics addressed by this workshop is wide, including, but not limited to:

- Energy harvesting and efficiency
- Interaction between telecom and different vertical industries
- M2M/IoT test beds and trials
- M2M/V2V communications/IoT standards
- Mission-critical and massive M2M Communications
- New concepts, applications and services
- Novel applications, trials and demos of services in IoT verticals
- Novel traffic modeling and resource/mobility management
- Physical layer requirements
- Pricing for D2D /M2M/V2V/IoT communication in cellular networks
- Protocol layer requirements

- Radio access technologies and protocols
- Scalable system architecture and components
- Security, trust and privacy enhancements
- Self-organization and autonomous configuration
- Simulation platforms, prototypes and field-trials for New Radio
- Software defined networks, slicing and cloud architecture for IoT
- Spectrum management and coexistence with unlicensed band
- Transformation of vertical industries by means of IoT services
- Ultra-reliable and/or low latency M2M Communications
- Use case-based design guidelines for system architecture

EDAS submission link: <https://edas.info/N23912>

Accepted and presented papers will be published in the IEEE PIMRC 2017 Conference Proceedings and submitted for inclusion in IEEEExplore®.



### IMPORTANT DATES

Review paper submission: **04 August 2017**  
Notification of acceptance: **18 August 2017**  
Camera-ready submission: **25 August 2017**

### WORKSHOP WS-07 CO-CHAIRS

**Hamid Aghvami**, King's College, UK  
**Amira Alloum**, Nokia Bell Labs, France  
**Piergiuseppe Di Marco**, Ericsson Research, Sweden  
**Sassan Iraj**, Aalto University, Finland (**Lead Co-Chair**)  
**Andrés Laya**, Ericsson Research, Sweden  
**Rapeepat Ratasuk**, Nokia Bell Labs, USA

### MORE INFO

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Workshops webpage: <http://pimrc2017.ieee-pimrc.org/authors/call-for-workshop-papers/>