TRANSACTIONS ON
EMERGING TELECOMMUNICATIONS TECHNOLOGIES

Call for Papers

Transactions on Emerging Telecommunications Technologies (ETT)

Cross-layer innovations in Internet of Things

Aims and Scope

Internet of Things (IoT) became the design language for all smart and pervasive environments able to offer innovative services, such as environmental monitoring, building automation, healthcare, smart cities, smart grid, logistics, cyber physical systems, etc. In near future, the industry supporting it is expected to grow, while by 2020, 40% of all world data will come from IoT objects such as sensors and wearable devices. What is forming IoT is concentrated about the development of micro-controllers (MCUs), dedicated systems-on-chip (SoC), intelligent sensors, sensor networks and supporting software architectures.

However, to make it all feasible, with tremendous evolution in data acquisition and transfer it is needed to consider efficient hardware and innovative software architectures that still need to be developed to make it a reality. This mostly introduces distributed intelligence for a reliable and effective processing of the information about the physical world that should provide a complete knowledge to the top running applications. These are related to the efficient usage of radio technologies usual referred as in outdoor, indoor, urban, rural environments, its ranges and battery/battery-less usage. In addition, communication protocols should handle IoT requirements for multiple device, low-power, real-time operations or satisfying timely consumer needs. Some further challenges involve efficient device discovery schemes, sleep-mode management, application requirements, or other power constraints.

To address these needs, IoT technologies such as Bluetooth Low Energy (BLE), Radio Frequency Identification (RFID), or other outdoor technologies such as LoRa/LoRaWAN, Sigfox, NB-IoT appear to provide a cellular system for IoT devices while transmitting small amounts of data, while going to mmWave in 5G is considered to provide higher bandwidths/throughputs. All of these radio technologies are advancing with aim to satisfy future requirements, there is still the vast space for improvements which require attention from academia, practitioners and industry, standardization organizations, and governments to address these challenges.

With this special issue, we invite authors to submit original research or review articles mainly focused on cross-layer technological, architectural, and practical innovations in the field of smart technologies and architectures enabling the Internet of Things. Potential topics aiming at solving particular issues that have cross-layer impact include, but are not limited to:

- Modelling/simulation/performance analysis of short, medium and long range radio access technologies
- Proof of concepts and experimental work on long range low power wireless technologies
- IoT-aware systems based on wireless and wearable devices

- Embedded systems in IoT-aware system architectures
- Protocols performance analysis in IoT-aware architectures
- Smart environments based on IoT Technologies
- Near-zero energy and renewable energy radios for IoT and PHY/MAC layer techniques for long range low power IoT
- Mobile applications and rapid prototyping in the IoT
- Middleware, Semantic Web and Ontology in the IoT
- IoT design based on social networks
- Fog Computing in the IoT
- Intelligent Transport Systems
- Localization systems
- Safety and emergency systems based on IoT technologies
- Case studies, field trials, and industrial Applications

Besides Open Call papers, a part of this special issue could be dedicated to extended versions of the best papers published in **SpliTech 2019 (2019.splitech.org)** in the **IoT track**.

Important Dates:
Submission Deadline: November 15, 2019
Author Notification: January 15, 2020
Final Manuscript: February 15, 2020
Publication: 2020

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