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IEEE Internet of Things Journal Special Issue on

“Things” as Intelligent Sensors and Actuators in the Users’ Context: Processing and Communications Issues

Modern 'things' of the Internet of Things (IoT) are embedded device that often combine the functions of mobile phones and PDAs. With the introduction of modern operating systems suited to be employed on such objects, they are now considered versatile devices and offer a wide range of possible uses. The technological evolution of the IoT and of the related devices, and their increasing diffusion, give mobile network providers the opportunity to come up with more advanced and innovative services. Among these are the so-called context-aware services: highly customizable services tailored to the user’s preferences and needs, which rely on real-time knowledge of the user’s surroundings, without requiring complex configuration on the user’s part. Examples of context-aware services are user profile changes that result from context changes, user proximity-based advertising or media content tagging, etc. Applications based on the information acquired, processed and distributed by the IoT can answer the following questions about the objects' surroundings: What, Who, Where, When, Why, and How. Consequently, a description of the environment in which the IoT is deployed must be obtained by acquiring and combining signals and data from different sources of the devices, both external (e.g., cell IDs, GPS coordinates, nearby WiFi and Bluetooth devices) and internal (e.g., idle/active status, battery power, accelerometer measurements, microphones, camera). Starting from the sources and sensors available on the mentioned 'Things', and the information they can provide, it is possible to develop a set of services, such as Audio Environment Recognition, Speaker Identification, Indoor and Outdoor Positioning, and User Activity Recognition with different aims: security and safety, e-health, wellness, commercial advertisement, etc. On the other hand, a 'Thing' allows the sending of information to the user or driving his behaviour by exploiting the available interfaces of the things themselves such as displays, camera flashes, speakers, etc. It can act as an actuator. All the aforementioned processing, computing, communications issues and also energy saving solutions represent very hot topics in current research within the field; this Special Issue will deal with such topics, but is not limited to such areas of study. The Special issue will cover signals/data processing, communications and networking along with the following keywords.

Topics of interests include (but are not limited to) the following categories:

- emerging trends of context awareness in the IoT
- ambient information gathering and modeling
- context reasoning/extraction from large-scale data and signals
- crowd sensing
- IoT interfaces
- personal activity recognition
- emotion recognition
- radio-based sensing
- personal awareness in environments
- active authentication
- IoT through terrestria/satellite networks
- e/m-health applications and architectures
- social information understanding
- enhancing social interaction among peers
- mobile social networks
- urban sensing
- intelligent transportation systems employing IoT
- energy efficiency
- user mobility patterns
- QoS in the heterogenous IoT
- IoT programming

Important Dates

Submissions Deadline: December 1, 2015  First Reviews Due: February 29, 2016
Revision Due: March 31, 2016  Second Reviews Due/Notification: April 30, 2016
Final Manuscript Due: May 15, 2016  Publication Date: August 2016

Submission

The special issue seeks submission of papers that present novel original results and findings on Things’ as Intelligent Sensors and Actuators in the Users’ Context: Processing and Communications Issues. Solicited original submissions must not be currently under consideration for publication in other venues. Significant extensions of conference papers are welcome. Author guidelines and submission information can be found at http://iot.ieee.org/journal. All manuscripts should be submitted through Manuscript Central: http://mc.manuscriptcentral.com/iot.

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