WICT14: December 2014, Malaysia
Internet of Things: Next Generation Internet

Special track title: Internet of Things: Next Generation Internet

Rationale of the need and objective of the track:

Internet of Things (IoT) is a global network infrastructure where in the physical and virtual objects are all made equipped with data capture and communication capabilities so that they can use the ubiquitous internet to transmit data and other controlling purposes. The physical objects of the world will be seamlessly integrated into information network. The integration may be various purposes like – data capture, monitoring and controlling among many others. Wireless links must spread beyond smart phones, PCs and Tablets.

Since the existence, the planet itself – be it nature, humans or physical objects, has been generating enormous amount of data and we have just lost it. Also, with the parallel growth of the cloud technologies, the data can be accessed, manipulated and controlled from anywhere.

The Internet of Things requires a few necessary components to enable communication between devices and objects. Objects need to be augmented with an Auto-ID technology, typically an RFID tag, so that the object is uniquely identifiable. Also, an RFID tag allows the object to wirelessly communicate certain types of information, which leads us to another requirement – the ability to monitor data. Truly smart objects will be embedded with both an RFID tag and a sensor to measure data. The sensor may capture fluctuations in the surrounding temperature, changes in quantity, or other types of information.

The Web of Things is expected to have broad and sweeping economic and societal impact. Open standards will be critical to enabling exponential growth of the kind we experienced with the early days of the Web, that saw it growing from a handful of enthusiasts in the early nineties to a global phenomenon in just a few years. Wireless Sensor Networks (WSNs) are playing more and more a key role in several application scenarios such as healthcare, agriculture, environment monitoring, and smart metering.

The objectives are as follows:

- To present and discuss the most recent innovations and experiences in the field of Internet of Things
- To provide a platform for academia and practitioners to exchange ideas and to discuss challenging research issues in RFID, Web of Things (WoT) and Sensor Networks in Internet of Things

Specific topics of interest

Recommended topics (for IoT) include but are not limited to the following:

- Security for homes, businesses and public settings
- Healthcare at home and in hospitals
- Manufacturing, construction and retail
- Transportation: cars, buses, metro, trains
- Utilities: electricity, water, gas, drainage
- Energy efficiency, smart appliances and the smart grid
- Managing emergencies: floods, fires, earthquakes and civil disturbances
- Role of Semantics

- User Interfaces
- Scalability
- Open Market
- Mesh wireless sensors technology and case studies
- Real time locating systems (RTLS) assessed: WiFi, UWB, ultrasound Indoor Positioning Systems
- Passive RFID and passive RFID sensors
- Indoor Positioning Systems IPS
- Ultra low power electronics
- Energy storage for the internet of things
- Energy harvesting
- Printed and ubiquitous electronics

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