IEEE INTERNET OF THINGS JOURNAL
A joint publication of
IEEE Sensors Council, IEEE Communications Society, IEEE Computer Society, and IEEE Signal Processing Society

CALL FOR PAPERS

IEEE Internet of Things Journal Special Issue on

Towards Positioning, Navigation, and Location Based Services (PNLBS) for Internet of Things

In the past decade, technological advancements have facilitated the manufacturing of compact, inexpensive, and low-power consuming receivers and sensors for smart devices (e.g., GPS, WiFi, MEMS sensors, RFID, UWB, BLE, etc.). This arises the fast development of Positioning, Navigation and Location Based Services (PNLBS), and leads them become much broader than just providing a location or navigation.

These positioning technologies and their enabling integrated systems have been promoted into the IoT world such as asset tracking, autonomous parking, virtual reality, context awareness, condition monitoring, geolocation, smart manufacturing, as well as smart cities. In fact, PNLBS have become indispensable to the future of IoT. On the other hand, IoT systems create limitless possibilities for PNLBS, due to their sophisticated cloud computing technologies, powerful big data analysis, and embedded multi-sensors.

The aim of IoT architectures for provisioning of PNLBS is to design an accurate, low-cost, low-power, reliable, and scalable solution for cutting-edge applications. To achieve this goal, several challenges should be addressed, such as improving positioning accuracy, reducing the power cost, handling to track millions of devices as well as transmitting and processing big data. Therefore, the research is required to conduct on not only PNLBS algorithms, but also new IoT architectures and chip design technologies. Extensive research efforts have been paid either on PNLBS algorithms, or IoT architectures and chip design. However, research efforts on their combination remain open and require further investigations, such as how to accurately track millions of devices by consuming low power, how to use IoT technique (e.g., crowdsourcing) to automatically generate wireless fingerprinting database for positioning, how to design low-power positioning chip/system suitable for IoT architectures, etc.

The goal of this Special Issue is to solicit the latest unpublished work on PNLBS for IoT. The areas of interest include, but are not limited to, the following:

- Scalable IoT architectures for asset tracking
- Geo-centric cloud/edge computing in IoT
- Security and privacy in PNLBS
- Low-power chip/system design for positioning in IoT
- Crowdsourcing for positioning in IoT
- Machine learning for location estimation in IoT
- Multi-sensors fusion for IoT
- Wireless localization technologies (WiFi, BLE, RFID, UWB, etc.) in IoT
- MEMS sensors for localization and context awareness in IoT
- Advanced estimation theories for positioning in IoT
- Control and navigation technologies for autonomous system (e.g., UAV, driverless vehicle, etc.) in IoT
- Location based services for smart city (e.g., e-health, smart home, smart transportation, etc.) applications in IoT

Important Dates

Submissions Deadline: **September 1, 2017**
First Reviews Due: November 15, 2017
Revision Due: January 1, 2018
Second Reviews Due/Notification: February 15, 2018
Final Manuscript Due: March 1, 2018
Publication Date: 2018

IEEE INTERNET OF THINGS JOURNAL
A joint publication of
IEEE Sensors Council, IEEE Communications Society, IEEE Computer Society, and IEEE Signal Processing Society

Submission

All original manuscripts or revisions to the IEEE IoT Journal must be submitted electronically through IEEE Manuscript Central, http://mc.manuscriptcentral.com/iot. Solicited original submissions must not be currently under consideration for publication in other venues. Author guidelines and submission information can be found at http://iot.ieee.org/journal.

Guest Editors

Yuan Zhuang (Lead Guest Editor)
Bluvison Inc., USA
zhy.0908@gmail.com

Naser El-Sheimy
University of Calgary, Canada
elsheimy@ucalgary.ca

Yue Cao
Northumbria University, UK
yue.cao@northumbria.ac.uk

Jun Yang
Southeast University, China
dragon@seu.edu.cn