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IEEE Internet of Things Journal Special Issue on
Large-scale Internet of Things: Theory and Practice

Internet of Things (IoT), as an ecosystem that interconnects physical objects with telecommunication networks, introduces a tighter connection between the cyber space and the physical reality and will develop toward large-scale and ubiquitous directions, imposing increasingly higher requirements on safety, reliability, security, energy-efficiency, performance, robustness and cost-efficiency. It also poses new problems and challenges due to its intrinsic feature of large scale, in terms of spatial and temporal distribution, information amount, energy consumption, interfaces, functionalities, etc. These unprecedented challenging issues are across the disciplines of embedded system, manufacturing, telecommunication, computing, sensing, software engineering, data management and analysis. Emerging and advanced communication technologies (e.g., cloud-based radio access networks) introduce many new opportunities to tackle the challenging issues in large-scale ubiquitous IoT. To address such challenges in large-scale IoT, besides requiring intelligent algorithms for data collection and analysis, efficient network diagnosis and management, we need new analytical tools, fundamental mathematics beyond the confines of traditional communication and information theories, and even methodologies from other networking related fields like economics, biology, and thermodynamics, to shed light on the fundamental performance limit of large scale IoT system and to guide the design, implementation, development, and optimization of emerging IoT technologies.

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

- Networking architectures and protocols for software-defined large-scale IoT
- Machine-to-Machine communications
- Smart-grid, robot networks, unmanned aerial vehicles, vehicular networks
- Energy-efficient and cost-efficient algorithms, systems and protocol design
- Experimental testbed, prototype design and implementation
- Applications, e.g., RFID for supply chain management, sensors for smart city etc.
- Safety, privacy and security in large-scale IoT
- Performance modeling, evaluation, and optimization for large-scale IoT
- Analysis of spectrum efficiency, capacity, and energy efficiency for large-scale IoT
- Cloud-assisted wireless networks, data management and processing

Important Dates
Submissions Deadline: **March 31, 2015**   First Reviews Due: June 30, 2015
Revision Due: August 31, 2015   Second Reviews Due/Notification: October 1, 2015
Final Manuscript Due: November 1, 2015   Publication Date: February 2016

Submission
The special issue seeks submission of papers that present novel original results and findings on Large-scale Internet of Things: Theory and Practice. 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. All manuscripts should be submitted through Manuscript Central: http://mc.manuscriptcentral.com/iot.

Guest Editors
- Song Guo
  The University of Aizu, Japan
   Email: sguo@u-aizu.ac.jp

- Jiajia Liu
  Xidian University, China
   Email: liujiajia@xidian.edu.cn

- Ivan Stojmenovic
  Deakin University, Australia
  University of Ottawa, Canada
  Email:stojmenovic@gmail.com