Wireless Communications and Mobile Computing

Special Issue on

Advanced Signal Processing for Wireless Localization Systems

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Over the recent decades, wireless localization has not only emerged as an important application for various services and Internet of Things (IoT) systems ranging from logistics to smart healthcare but also attracted tremendous attention from research communities. Relatively inexpensive, small, and smart mobile computing devices have opened many valuable opportunities to location-based industrial applications, especially for indoor scenarios.

The performance of the state-of-the-art wireless localization systems (WLS) can be further improved by innovative and novel signal processing techniques. Some of the recently emerging signal processing approaches in WLS are data fusion, accurate modelling of various emerging sensor technologies (such as visible light positioning (VLP), ultrawide band radar, and inertial measurement units (IMU)), cooperative localization schemes, and machine learning methods. Signal processing techniques for standalone sensors are not sufficiently adequate anymore to address all the challenges encountered in WLS such as complexity, energy efficiency, accuracy, hardware cost, scalability, and security. Machine learning algorithms also play a key role in this kind of multidimensional, multiagent, and nonlinear systems. Another aspect is to reduce the human intervention as much as possible towards full automation. To sum up, there is a large ground as well as a huge demand for new signal processing techniques in WLS.

This special issue aims to establish a scientific platform for researchers to contribute to the rapid advances in WLS. We welcome novel and innovative contributions to address the challenges associated with signal processing in WLS.

Potential topics include but are not limited to the following:

- Localization using visible light positioning
- Data fusion for IoT localization
- Channel models and channel sounding for wireless localization systems
- MIMO techniques for wireless localization systems
- Sub-GHz localization
- Radio location techniques in wireless localization systems
- Machine learning algorithms for indoor localization
- Game theoretic approaches for wireless localization systems
- Big Data for wireless localization systems
- Energy-efficient localization techniques
- Distributed localization in wireless localization systems
- Cooperative localization in wireless localization systems
- (SLAM) for wireless localization systems
- Passive wireless localization
- Radio Tomographic Imaging (RTI) for wireless localization
- Heterogeneous approaches that combine different radio access technologies (such as cellular systems like 3G and 4G, WLAN, and WiMAX) for wireless localization systems
- Calibration techniques for indoor localization

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/wcmc/aspw/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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