

**CALL FOR PAPERS:
2015 IEEE Globecom Workshop on
Localization for Indoors, Outdoors, and Emerging Networks (LION)**

Localization and tracking technologies for portable devices use a wide variety of networks including cellular, satellite, and WiFi, and are critical for a wide range of applications such as navigation, E911 response, location-based services, location-dependent advertising, and location-based smartphone apps. Technologies for these “conventional” use cases will continue to advance as a result of improved algorithms, better fusion of multiple tracking modes, new network architectures, and improved sensor technologies. In addition, a number of recent events and trends will likely drive changes in the goals of tracking and localization research:

- **Z-axis localization.** Because the majority of emergency 911 calls are made from cellular phones, the US Federal Communications Commission has recently proposed adding a provision for vertical localization so that first responders can identify the caller’s floor level. The vertical resolution is proposed to be an order of magnitude more stringent than the typical horizontal resolution, measured in tens of meters, posing a significant new challenge.
- **Emerging Cellular Paradigms (5G and Heterogeneous Networks).** Standardization for the fifth generation of 3GPP cellular networks is slated to begin in 2016, so 2015 will be an active year for discussing new features and capabilities of these networks. Whereas previous cellular networks were optimized for communication, there is an opportunity to optimize 5G networks jointly for both communication and localization.
- **Internet of Things.** Wireless service providers are currently developing services for generating revenue from the upcoming influx of connected objects known as the Internet of Things. Compared to the tracking of mobile phones, tracking for IoT could have significantly different requirements regarding scalability, accuracy, and latency, and more stringent constraints on the complexity and energy resources at the device.

The workshop aims to attract recent work in all areas of localization, with an emphasis on physical-layer techniques and on the recent trends listed above. Additional topics of interest include, but are not limited to:

- Channel measurements and fundamental theory
- Techniques for indoor localization
- Techniques for outdoor localization
- Techniques for wide-area RF networks including satellite and cellular.
- Techniques for short-range RF networks including WiFi and Bluetooth Low Energy
- Non-RF techniques, including visual-based tracking
- Collaborative localization
- Fusion of multiple localization modes
- System design for vertical solutions including healthcare and asset tracking
- Prototypes and implementation

Submission deadline: June 17, 2015

Notification: September 1, 2015

Camera-ready deadline: October 1, 2015

Website: <http://lion.spsc.tugraz.at>

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