



### Third International Workshop on Software Engineering for Sensor Network Applications

In conjunction with ACM/IEEE Intl. Conference on Software Engineering (ICSE) June 2-9, 2012, Zurich (CH)

By acting as the interface between digital and physical worlds, wireless sensor networks (WSNs) represent a fundamental building block of the upcoming Internet of Things and a key enabler for Cyber-physical and Pervasive Systems. Despite the interest raised by this decade-old research topic, the development of WSN software is still carried out in a rather primitive fashion, by building software directly atop the operating system and by relying on an individuals hard-earned programming skills. WSN developers must face not only the functional application requirements but also a number of challenging, non-functional requirements and constraints resulting from scarce resources. The heterogeneity of network nodes, the unpredictable environmental influences, and the large size of the network further add to the difficulties. In the WSN community there is a growing awareness of the need for methodologies, techniques, and abstractions that simplify the development task and increase the confidence in the correctness and performance of the resulting software. Software engineering (SE) support is therefore sought, not only to ease the development task but also to make it more reliable, dependable, and repeatable. Nevertheless, this topic has received so far very little attention by the SE community.

SESENA12 aims to attract researchers belonging to both the SE and WSN communities, not only to exchange recent research results on the topic, but also to stimulate discussion about the core open problems and to define a shared research agenda. The workshop welcomes both *research contributions* and *position statements*. The former will foster in depth technical discussions of novel results with an audience composed of both SE and WSN researchers. The latter will provide the opportunity for presenting open problems, provocative views, or previously unexplored ideas in an informal fashion. SESENA12 will also host two special sessions: (i) a "speakers' corner" composed of impromptu presentations where attendees (including those without accepted papers) will have the opportunity to present their own views in very short segments (e.g., 2-4 minutes), and (ii) a session dedicated to the VISION project, an FP7 ERC Starting Grant focusing on developing an innovative infrastructure for real-time sensing services. In the latter session, the intermediate project results will be presented with the dual goal of sharing the uniqueness of the ERC-style grants and discussing technical elements to identify possible future collaborations.

#### Topics of Interest

The workshop focuses on software engineering issues arising in networked (embedded) sensing systems and their possible integration in Internet of Things scenarios. Specific topics of interest include, but are not limited to:

- environment and context modeling;
- development methodologies;
- (macro-)programming languages and compilers;
- testing, debugging, and validation;
- non-functional modeling and analysis;
- security and trust;
- formal verification and model-checking;
- model-driven approaches;
- middleware systems;
- interfacing WSNs and business services;
- integration of WSNs in IoT applications.

#### Submissions

Prospective participants are invited to submit research or position papers containing original unpublished material describing ongoing work and new ideas, mature research results, or experience reports. Submissions must conform to the ICSE submission format and rules. Research papers may not exceed 6 pages, position papers must be limited to 2 pages. Papers must be submitted electronically through <https://www.easychair.org/conferences/?conf=sesena12>. The program committee will review all submissions for quality, relevance, and their potential to trigger discussions at the workshop. Accepted papers will be published in the ICSE companion proceedings and on the workshop web site.

#### Important Dates (deadline extended!!!)

Paper submission : February 24, 2012  
 Author notification : March 19, 2012  
 Camera Ready Version : March 29, 2012  
 Workshop : June 2, 2012

#### Workshop Organizers

- Amy L. Murphy, FBK-IRST, Italy (Program Chair)
- Vittorio Cortellessa, University of L'Aquila, Italy (Program Chair)
- Kurt Geihs, University of Kassel, Germany
- Luca Mottola, Swedish Institute of Computer Science
- Gian Pietro Picco, University of Trento, Italy
- Kay Römer, University of Lübeck, Germany & ETH Zurich, Switzerland