

Wireless Sensor Networks and its Applications (WSNA 2010)

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Introduction: with the advances in MIMS technology, sensor networks applications have been emerging. Example environments include battlefield, environmental monitoring, healthcare, rescue operations, and monitoring critical infrastructures. However, sensor networks face a large number of challenges; for instance, sensor nodes suffer from limited memory, limited computational capabilities, and short sensing and communication ranges. In addition and the most important challenge is the sensors' energy where sensors are usually deployed in unattended environment and they are supposed to function for a long period of time. With these challenges, to form a wireless sensor network (WSN), there are four phases that a network has to go through to operate: deployment, sensing, routing, and decision making. In the deployment phase, sensors either placed manually or randomly using a flying robot for example in the monitored field. Many problems as well as techniques are used for accurate and efficient sensor deployment. However, the deployment problem stills a hard problem due to the diversity of sensor network applications. In the second phase, sensors sense the environment features and since they are usually deployed in a large number may be thousands or even hundreds of thousands, huge data is collected and need to be routed. Again data gathering in sensor networks is another challenge which leads to the routing problem where sending and transmitting data through a wireless media consume the most of the wireless sensor node's energy. In addition, sensors

are not like other wireless devices where a large number of bytes need to be sent. Therefore, TCP/IP protocols might not be appropriate for sensor networks due to the large overhead associated with each message. New and efficient protocols need to be invented for WSN. In the final phase, the gathered data from the network of sensors is forwarded to a centralized node named “sink” node which is responsible for analyzing the data and taking a decision. In addition, the sink might be required to query a specific area or nodes in the monitored field. In such case, distributed decision making algorithms might be beneficial for WSN. Moreover, sensors might need to be integrated to the Internet which is another problem.

Therefore, this special session is dedicated for reporting recent research in the field of wireless sensor networks. Topics in this session include but not limited to:

- Sensor Networks Hardware
- Health Care WSN
- Environmental WSN
- Sensor Deployment Algorithms
- Data mining in WSN
- Data Fusion in WSN
- Routing in WSN
- Cognitive Wireless Sensor Networks
- Object tracking in WSN
- WSN Programming
- Distributed and Parallel Algorithms for Smart WSN
- Intelligent Decision Making Process in WSN
- Cross layer in WSN
- Smart MAC Protocols for Wireless Sensor Networks
- Energy efficient Protocols in WSN
- Intelligence Internet-Based WSN
- Smart Localization Techniques for WSN
- Security in WSN

Instructions for Authors:

Papers must correspond to the requirements detailed in the (Paper Submission) on the conference flyer <http://cig.iet.unipi.it/isda2010/flyer.pdf> and All accepted papers will be published in the proceedings of ISDA'10 that will be also included

in the IEEEExplore digital library. Extended versions of selected papers will be considered for publication

Registration Fees:

All papers must be presented by one of the authors, who must pay the registration fees. <http://cig.iet.unipi.it/isda2010/>

Paper Reviewing and Publication

Submitted papers will be reviewed. Accepted papers, which should not exceed 6 pages (PDF) following the double column IEEE format. All accepted papers will be published in the proceedings of the ISDA'10. Selected papers will be published in special issues of a selection of International Journals (to be announced).

Tentative Dates of Submission and Acceptance

- Deadline for paper submission June 26, 2010
- Notification of acceptance August 14, 2010
- Camera-ready manuscript submission September 15, 2010