

Middleware for Sensor networks (MidSens'08)

Workshop at ACM/IFIP/USENIX 9th International Middleware Conference (Middleware2008)

December 1st, Leuven, Belgium

<http://www.comp.lancs.ac.uk/computing/midsens08/>

CALL FOR PAPERS

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IMPORTANT DATES

Abstract Submission deadline:

July 25, 2008

Paper Submission deadline:

August 1, 2008

Acceptance notification:

September 15, 2008

Camera-ready version due:

October 8, 2008

Workshop date: Dec 1st, 2008

The aim of this workshop is to stimulate research in the specific domain of middleware for wireless sensor networks (WSNs), to collect current expertise, and to further refine and integrate different approaches. In particular, the workshop will investigate how middleware architectures can relieve programmers from the lowest level sensor details, while still enabling them to exploit a sensor node's resource capabilities in the most optimal way. This workshop aims to trigger and guide research efforts to create an integrated middleware vision, which is required to handle the challenges inherent to developing and deploying complex sensor applications in an efficient way.

Many current projects on sensor middleware focus on developing algorithms and components for data aggregation, localization, service discovery, routing, synchronization, etc. These projects, however, often do not pay sufficient attention to integrating these algorithms and components into a generic middleware architecture, and for helping application developers to compose a system that exactly matches their requirements. This is particularly timely as commercial WSN platforms begin to emerge.

This complexity of sensor network programming is partly caused by the highly resource limited, dynamic and heterogeneous environments in which sensor applications must operate. These specific WSN characteristics require a specific approach for middleware development that goes beyond dealing with resource constraints: middleware for WSNs should involve an end-to-end approach that handles the WSN as a whole rather than as a group of individual nodes. This implies considerable consequences for typical middleware services such as mobility, coordination, service discovery, security, data aggregation, quality of service, handling hardware heterogeneity, handling communication errors, scalability, and network organization.

The workshop seeks papers in, but not limited to, the areas listed below:

Software engineering support:

- Software architectures
- Sensor middleware programming models and abstractions.
- Dynamic reconfiguration & adaptation
- Sensor middleware for self-assembly, self-configuration, self-distribution and autonomic computing in general
- Sensor mobility, heterogeneity.
- Lightweight agent middlewares

Middleware services:

- Tracking, localization, and synchronization
- Aggregation techniques and data management
- Energy-aware middleware mechanisms
- QoS, privacy and security
- Middleware for mobile sensors

Management of sensor networks:

- Overlay & topology management
- Resource discovery and management
- Device/Service discovery
- Interoperability of WSNs with legacy middleware

Sensor applications/tools:

- Testing and simulation tools for middleware
- Experience/application/assessment of sensor middleware

Submitted papers must be original work in English without substantial overlap with papers that have been published or that are simultaneously submitted to a journal or conference with proceedings. Submissions must not exceed 6 pages, must strictly follow the ACM conference proceedings format, and must be submitted in PDF format.

All workshop papers will be uploaded to the ACM Digital Library.