

Middleware for Sensor networks (MidSens2006)

Workshop at ACM/IFIP/USENIX 7th International Middleware Conference (Middleware2006)

November 28, Melbourne, Australia

<http://www.cs.kuleuven.be/conference/MidSens2006/>

CALL FOR PAPERS

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IMPORTANT DATES

Submission deadline:

August 1, 2006 August 8, 2006

Acceptance notification:

September 15, 2006

Camera-ready version due:

October 1, 2006

Workshop: November 28, 2006

The aim of this workshop is to stimulate research in the specific domain of middleware for sensor networks, to collect current expertise, and to further refine and integrate different approaches. In particular, we will investigate how middleware architectures can relieve programmers from the lowest level sensor details, while still enabling them to exploit a sensor's resource capabilities in the most optimal way. This workshop wants 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.

Middleware for sensor networks is an emerging and very promising research area. Most of the current projects on sensor middleware are at an early stage, focusing on developing algorithms and components for data aggregation, localization, service discovery, synchronization, etc. These projects, however, often lack attention for integrating these algorithms and components into a generic middleware architecture, and for helping application developers to compose a system that matches their requirements.

The complexity of sensor programming is partly caused by the highly resource limited, dynamic and heterogeneous environments in which sensor applications must operate. Sensor network characteristics require a specific approach for middleware development that goes beyond dealing with resource constraints: middleware for sensor networks involves an end-to-end approach in which the sensor network as a whole is treated as an endpoint. 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
- 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

Security:

- Privacy aspects
- Secure system engineering

Management of sensor networks:

- Resource discovery and management
- Device/Service discovery

Sensor applications/tools:

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

Submitted papers must be original work without substantial overlap with papers that have been published or that are simultaneously submitted to a journal or conference with proceedings. All submissions must be in English. Submissions must not exceed 6 pages, must strictly follow the ACM conference proceedings format, must be laid out according to the final camera-ready formatting instructions, and must be submitted in PDF format.

The proceedings will be uploaded to the ACM Digital Library. Enhanced versions of the best papers will be published in a special issue of IEEE distributed systems online (<http://dsonline.computer.org/>).