Wireless Sensor Networks and Multiagent Systems

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Wireless sensor networks (WSN) are networks of small computers endowed with sensors and wireless connectivity. The comparison of WSN with multi-agent systems (MAS) is natural, as the two approaches consist of interactive entities situated in an environment they can sense and act upon locally. Agents provide engineers with a higher level of abstraction, so that WSN become a useful application domain for MAS. MAS researchers have actually developed adequate models and approaches to address some current research issues in the area of WSN (e.g. self-adaptation and collective behaviors). The goals of this tutorial are to (i) introduce WSN technologies, (ii) show why MAS are important for the development of WSN, (iii) explain the main research challenges in WSN, and (iv) show how MAS can address relevant issues. This tutorial is a half-day session tailored for researchers and practitioners interested in the application of MAS to WSN. It assumes background knowledge in MAS and basics of networks, although it will summarize important information when necessary.

Related events: Workshop on Agent Technologies for Sensor Networks (AAMAS); International Conference on Networked Sensing Systems; Conference on Embedded Networked Sensor Systems; European Conference on Wireless Sensor Networks, RoboCup.