



ACM Transactions on Autonomous and Adaptive Systems

Special Issue on Self-Adaptive and Self-Organizing Wireless Networking Systems

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Important Dates:

Paper submission due: **July 31st, 2008**
Acceptance notification: Dec. 31st, 2008
Camera-ready due: Feb. 28th, 2009
Tentative publication date: June/Sep. 2009

Submission Guideline:

The manuscripts should be formatted according to the ACM TAAS guidelines available from the journal homepage (<http://www.acm.org/pubs/taas>) and submitted to the guest editors through email (cpoellab@cse.nd.edu).

Recent advances in wireless communications and networking, distributed sensing and control, and real-time and embedded systems have led to some new computing paradigms, such as ubiquitous and pervasive computing, wireless sensor networks, and cyber-physical systems. Many novel and attractive applications are made possible, such as advanced automotive systems, environmental control, critical infrastructure control, high confidence medical devices and systems, etc. In these applications, a large scale wireless networking system that consists of massive numbers of connected processing elements, sensors, and actuators often plays a key role. The high complexity of such large scale heterogeneous systems raises new challenges to the system design: we expect the system to be context-aware and self-adaptive to internal and external environments to achieve reliable and robust performance; to be self-organizing and scalable so that managing and maintaining costs could be minimized; to have programmable architecture and protocols for achieving optimal performance in different situations/scenarios, etc. These challenges need to be addressed under joint efforts from different areas, such as networking, system, control, AI, biology, and others.

The special issue seeks original and unpublished papers that address theoretical and experimental work related to self-adaptive and self-organizing wireless networking systems (SASOWNS). Papers are solicited from, but are not limited to, the following topics:

- Self-adaptive architectures, algorithms, and protocols
- Control theoretical approaches for self-optimization
- Self-organizing wireless mesh, ad hoc, and sensor networking
- Self-configurable and programmable MAC and routing protocols
- Biological, economic, and social models for large scale SASOWNS
- Applications and testbeds of SASOWNS
- Autonomic and autonomous wireless networking systems

Submission Format and Review Guidelines:

Authors are invited to submit manuscripts reporting important developments (or advances) in the topics related to the special issue. The submitted papers must be written in English and describe original research not published nor currently under review by other journals or conferences. Parallel submissions will not be accepted. If an earlier version of the manuscript was published/accepted in conferences, authors should state so in the cover letter. The manuscript must be a substantial extension to the previously published/accepted work and a summary of changes and a copy of the previous conference paper must be submitted together with the submission to the special issue.

Guest editors will pre-screen submitted manuscripts for their suitability in the issue. Submissions passing the pre-screen process will go through a rigorous peer-review process according to the standards of TAAS. Submitting a paper implies the willingness of reviewing one paper submitted to the special issue.