

# CALL FOR PAPERS – TMC SPECIAL ISSUE ON SENSOR NETWORKS

## Special Issue Announcement

This Special Issue deals with recent advances in the study of Sensor Networks as distributed dynamic systems of interacting autonomous mobile sensor nodes. The objective is to achieve dependable mission performance through dynamic collaboration of many inexpensive, low reliability sensors with limited sensing, and communication ranges. Individual sensors must interact locally with their physical environment and self-organize to execute global objectives, like effective surveillance of enemy targets in a battlefield. Recent advances in modeling the nonlinear system dynamics of distributed multitime scale processes enable individual sensors to collaborate to respond to global changes. Unlike most ad hoc wireless networks that must adapt to mobility needs of their users, mission oriented sensor networks incorporate purposeful mobility that must be traded off against mission goals. The severe power and processing constraints call for energy-aware task execution and mobility in pragmatic applications. Continuous self-organization of distributed sensors may be needed for area coverage. Emergent behaviors and phase transitions need to be predicted and controlled. Adaptation to environmental and operational disturbances requires resource bounded optimal response. Collaborative intelligent inferencing is necessary to circumvent limitations of sensor data, communications, and equipment faults. Research papers that address mechanisms for situation awareness, deliberation, and coordinated adaptation in mission oriented mobile sensor networks are of interest.

## Topics

Topics include but are not limited to the following:

- Hybrid Control of Mobile Sensor Networks
- Self-healing and dependable sensor nets
- Dynamic Space-time Clustering
- Emergent Sensor Network Behaviors and Phase Transitions
- Network Reconfiguration Architectures and Protocols
- Purposeful Mobility Algorithms
- Energy Aware Task and Resource Allocation
- Self-organizing sensor arrays: engineered biological behaviors
- Security, privacy, and authentication
- Signal separation and interference rejection
- Collaborative signal processing
- Mobile Sensor Network Applications and Quantitative Results
- Optimal sensor placement

## Deadlines

Please submit your paper to Manuscript Central at <http://cs-ieee.manuscriptcentral.com/>. As an author, you are responsible for understanding and adhering to our submission guidelines. You can access them by going to <http://www.computer.org/mc/tmc/author.htm>.

Please feel free to contact the Peer Review Supervisor, Suzanne Werner at <[swerner@computer.org](mailto:swerner@computer.org)> if you have any questions.

<b>Last date for submission:</b>	15 March 2004
<b>First Round Reviews:</b>	1 May 2004
<b>Revised Paper Due:</b>	20 May 2004
<b>Notification of Acceptance:</b>	25 May 2004
<b>Final Paper Submission:</b>	1 June 2004
<b>Publication targeted for:</b>	3Q 2004

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