

# IEEE Sensors Journal

## Special Issue on Cognitive Sensor Networks

The objective of this special issue is to bring together state-of-art research in sensors, information processing, and communication with the perspective of cognitive sensor networks. The contributed papers will specifically address issues related to information centric sensor networks, regarding them as a multi-component system consisting of sensors, platforms, models, and communication infrastructures, that can collectively behave as a single dynamically adaptive system. Context aware sensing and communication give rise to additional challenges. Addition of new nodes and the demand for network scalability given a limited communication bandwidth, warrant the need for adaptive and optimal spectrum sharing protocols. Information relevance cannot be established without evaluating the sensor data against network objectives, therefore warranting the need for in-network information processing. The data centric nature of such networks warrants the need to simultaneously manage information and network topology through the cross layer design of the sensor nodes. The growing use and ubiquitous nature of sensor networks pose issues when networks deployed for multiple applications need to be combined or need to exchange information at the network level.

Cognitive sensor networks intersect with trends in information fusion, intelligent sensors, sensing grids, communication protocols, network routing, and complex event processing architectures. This special issue will focus on all aspects of design, development, implementation, operation, and applications of cognitive sensors and sensor networks. Topics of interest include (but are not limited to):

- Architectures for cognitive sensor networks
- Signal processing for cognitive sensor networks
- Cognitive routing metrics
- Sensor aided cognitive networks
- Cognitive mesh networks
- Localization and synchronization
- Self organization and reconfiguration
- Resource management
- Spectrum sensing
- Channel and context aware information fusion
- Information fusion under communication constraints
- Detection, classification, and tracking
- Autonomic computing
- Pattern analysis and situation awareness
- Intelligent sensors
- High level information fusion
- Simulation tools, benchmarks and testbeds
- Performance evaluation and modelling
- Distributed algorithms and reasoning
- Machine learning for sensor networks
- Sensor tasking, control, and actuation
- Semantics in cognitive sensor networks
- Applications

**Notes for Prospective Authors:** Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Expanded, archival versions of papers delivered at technical conferences are welcomed. All papers are refereed through a web-based peer review process. A guide for authors, sample copies and other relevant information for submitting papers are available at <http://mc.manuscriptcentral.com/sensors> under the heading "Information for Authors."

### Important Dates

Manuscript submission:	<b>15th January 2010</b>
Reviewer reports:	<b>15<sup>th</sup> May 2010</b>
Revised paper submission:	<b>15th July 2010</b>
Final manuscript submission to publisher:	<b>30th July 2010</b>

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