

**The 2008 International Symposium on Collaborative Technologies and Systems  
(CTS 2008)**

May 19-23, 2008

The Hyatt Regency Irvine  
Irvine, California, USA

<http://cisedu.us/cis/cts/08/>



**CALL FOR PAPERS**

**Special Session on  
Collaborative Trusted Sensing**

**Submission Deadline: January 29, 2008**

**Brief Description:**

The daunting challenges of counterterrorism and homeland defense are driving a capabilities-based research strategy focused on the need to detect, mitigate, and (if possible) prevent bold, asymmetric attacks or natural disasters. Decision makers need to be able to find and resolve what is needed when it is needed in the minimum cognitive bandwidth (essentially *Universal Situational Awareness*).

Universal Situational Awareness can be defined as “the ability to detect and understand the capabilities, intents, and locations – as well as the ability to cause harm – of any entity, no matter where it is, what its nature is, or how it is organized.”

This level of situational awareness requires a robust, multi-layer space (for global access, episodic events), air (regional, persistent surveillance and reconnaissance, continuous forensics), ground (proximate and varied), and cyberspace (anticipatory and forensic) sensing architecture with fused knowledge delivery enabling proactive/anticipatory/predictive and forensic capabilities.

These capabilities, in turn, establish an “unblinking eye” over the area of interest, providing *anticipatory and persistent decision support* to a wide range of users in preparation for application of a wide range of tailored effects supporting a wide range of contingencies.

In terms of the community’s widely accepted situational awareness components:

- *Sensors* provide the “sensing” component (data collection – detection and identification of relevant objects, states, values, action)

- *Collaborative, advanced exploitation* provides:
  - Comprehension (the interpretation and synthesis of data that gives *meaning* in a given situation)
  - Projection (prediction and simulation activities aimed at possible outcomes, future scenarios)
  - Resolution (intentions, courses of action supporting decisions and planning)

One organization that is aggressively pursuing research in this area, the Air Force Research Laboratory's Sensors Directorate, uses the term "*Layered Sensing*" to describe the combination of sensors, infrastructure, and collaborative exploitation techniques to:

"provide decision makers at all levels with *timely, actionable, trusted, and relevant situation awareness* to ensure their decisions achieve the desired effects. Layered Sensing is characterized by the appropriate sensor or combination of sensors/platforms, collaborative infrastructure and exploitation capabilities to generate that awareness."

This special session on Collaborative Trusted Sensing – to be held as part of the 2008 International Symposium on Collaborative Technologies and Systems (CTS'08) – will focus on assessing the state of the art in all phases (sensing, routing and storing, discovery, transformation, analysis and exploitation) of Layered Sensing. The objective is to highlight key issues, and possible solution spaces, to use collaboration techniques, tools and principles to realize the Layered Sensing situational awareness vision. We invite original contributions from researchers and practitioners in academia, government, and industry in this emerging collaboration specialty. The special session scope covers **all aspects of sensor technology, wireless sensor networking, and applications of networked sensor systems.**

### **Topics of Interest include (but are not limited to):**

- Distributed collaborative trusted sensor systems design and infrastructure
- Service models and architectures for layered sensing
- Trusted and reputation-based collaboration in sensor-based networks
- Modeling and simulation of sensor nets collaboration
- Collaboration in sensor net-based autonomous systems and vehicles
- Routing and storing of sensor data in collaborative operations
- Protocols for layered sensing systems
- Collaborative information discovery
- Collaborative exploitation in sensor nets for decision making
- Intelligent spaces using networked layered sensing
- Layered sensing systems evaluation
- Applications using layered sensing systems

### **Instructions for Authors:**

Authors are invited to submit original papers to the special session organizer by **January 29, 2008**. Electronic (pdf) submissions are encouraged and should be sent to [zywienm@saic.com](mailto:zywienm@saic.com). For other review electronic formats, please check with the organizer. Papers submitted for

review should not exceed 10 pages in IEEE single-spaced, double-column format. Include up to 6 keywords and an abstract of no more than 350 words. Submissions should also include the title, authors name, affiliation, e-mail address, fax number and postal address. In case of multiple authors, an indication of which author is responsible for correspondence should also be included. If accepted, the final manuscript will follow the CTS 2008 format that is available on the conference Web site at <http://cisedu.us/cis/cts/08/>.

Consistent with standard practice, each submitted paper will receive a minimum of three reviews. Papers will be selected based on their originality, timeliness, significance, relevance, and clarity of presentation. Initial selection will be based on full papers.

Submission implies the willingness of at least one of the authors to register and present the paper, once accepted. All accepted papers are required to be presented and will be included in the conference proceedings.

### **Special Session Organizer:**

#### **Michael L. Zywien**

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### **Technical Program Committee:**

All submitted papers will be rigorously reviewed by the special session technical program committee members.

- Michelle Cheatham, AFRL, WPAFB, Ohio, USA
- Dr. John Erickson, AFRL, WPAFB, Ohio, USA
- Bill McQuay, AFRL, WPAFB, Ohio, USA
- Mike Zywien, SAIC, Fairborn, Ohio, USA

### **Important Dates:**

<b>Paper Submission Deadline</b>	<b>January 29, 2008</b>
<b>Notification of Acceptance</b>	<b>February 11, 2008</b>
<b>Registration &amp; Camera-Ready Paper Due</b>	<b>March 3, 2008</b>

For information or questions about the full Symposium's program, tutorials, exhibits, demos, panel and special sessions organization, please consult the conference web site at URL: <http://cisedu.us/cis/cts/08/> or contact the symposium co-chairs: Bill McQuay at AFRL/RYT,

WPAFB ([William.McQuay@wpafb.af.mil](mailto:William.McQuay@wpafb.af.mil)) or Waleed W. Smari at the Dept. of Electrical and Computer Engineering, University of Dayton ([Waleed.Smari@notes.udayton.edu](mailto:Waleed.Smari@notes.udayton.edu)).