

# Cross Cutting Thread

## Robustness in a Network Centric Environment



Our research in the **Network Centricity** thread involves having reliable network constructs – so networks have to be robust and they have to have architectures that lend themselves to being robust. Not only in static form, but also if they are to serve mobile nets, in particular mobile nets in challenging environments. This thread addresses technical issues in *Communications and Networks* (e.g., new models of protection and trust management), *Computing and Software* (e.g., new ways to capture and discover information), and *Enterprise Architectures* (e.g., new ways to organize to support sharing), and *Computing and Services* (e.g., new ways to organize the task of building the application and its use over the widest range of applications). Six projects address various aspects of the Network Centricity challenge. A **one-hour guided tour** (starting at Thread Central at **9 am** and repeated at **11:30 am**) provides an overall orientation of the work being done in each technical area plus in-depth presentations by four projects. Please visit the remaining projects using the map provided on the reverse.

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### Communications and Networks

#### **CN-05 Mobility Support for C2 Systems**

Identification and assessment of emerging mobility support protocols, such as the Network Mobility (NEMO) Basic Support Protocol and the Host Identity Protocol (HIP), and to provide guidance as to how and when they should be used.

Tour

#### **CN-06 Policy-Based Management for Predictable and Sustained Airborne Networks**

The future Airborne Network will have to interoperate with a variety of platforms in a dynamic wireless environment very different from the fixed infrastructure of commercial networks. These platforms will integrate non-IP-based legacy communication systems and future IP-based networking systems. An overall management scheme must be implemented to control this network to provide a uniform management strategy across the entire network to enable consistent network behavior.

Tour

#### **CN-09 Advanced Tactical Networking**

Years of research into wireless networking has failed to yield acceptable results to the combined problems of mobility, quality of service, security, and effective use of RF spectrum. This MSR will attempt to create a comprehensive set of algorithms and protocols that will provide a wireless networking solution.

### Computing and Software

Tour

#### **CS-04 Time-Critical Resource Management in Dynamic C2 Systems**

Traditional real-time resource management and traditional any-time planning and decision making for machine-to-machine resource management in dynamic BMC2 systems having seconds-to-minutes timeframes

### Enterprise Architectures

#### **EA-03 Enterprise Transformation to Service Oriented Architecture: Case Studies and Unifying Framework**

Development of the integrated framework to guide the transformation to an SOA. The framework will integrate the most important components of the transformation: economics, governance, architecture, portfolio, risk, change management, and technology management.

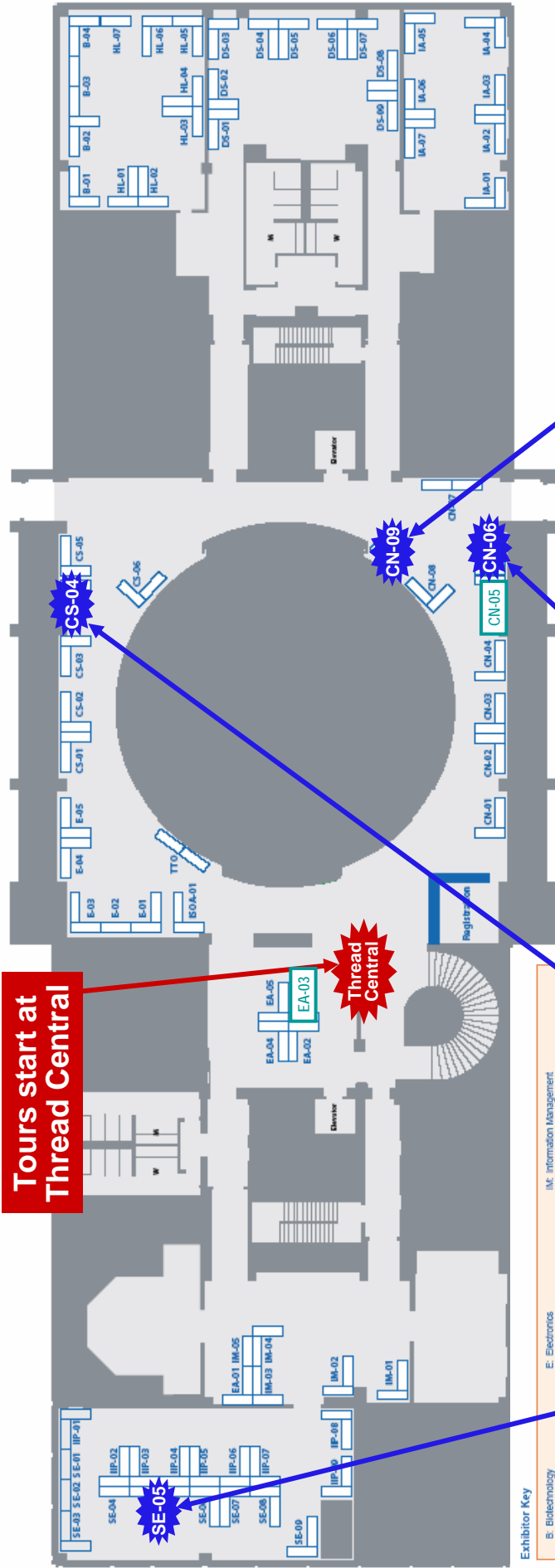
### Sensors and Environment

Tour

#### **SE-05 Netted Sensor Megaproject**

Large numbers of sensors, broadly dispersed in an area, can through the power of the network provide the means to expedite the development of actionable knowledge.

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**Tours start at Thread Central**

**Thread Central**

- Exhibitor Key**
- B: Biotechnology
  - CN: Communications and Networks
  - CS: Computing and Software
  - DS: Decision Support
  - E: Electronics
  - EA: Enterprise Architectures
  - HL: Human Language
  - IA: Information Assurance
  - IP: Intelligent Information Processing
  - IM: Information Management
  - ISQA: Investment Strategies and Operational Analysis
  - MST: Modeling, Simulation, and Training
  - SE: Sensors and Environment

<b>SE-05</b> Netted Sensor Megaproject	<b>CS-04</b> Time-Critical Resource Management in Dynamic C2 Systems	<b>CN-06</b> Policy-Based Management for Predictable and Sustainable Airborne Networking	<b>CN-09</b> Advanced Tactical Networking
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**Thread Tour**

**Please also visit**

**CN-05**  
Mobility Support for C2 Systems

**EA-03**  
Enterprise Transformation to Service Oriented Architecture: Case Studies and Unifying Framework