

Cross Cutting Thread Network-Based Airborne Battle Management



Our research in the **Network-Based Airborne Tactical C2&ISR** thread addresses key technical issues related to transitioning from stovepiped nodes interfacing through tactical data links to fully integrated Net-centric components of a C2C Enterprise. *Key relevant focus areas highlighted in this thread include: Airborne Network Technologies, Netted Sensors, ISR Information Fusion, and Service-Oriented C2ISR Architectures.* A **one-hour guided tour** (starting at **Thread Central** at **10 am** and repeated at **2 pm**) 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.

Airborne Network

Tour CN-06 Policy-Based Management for Predictable and Sustainable Airborne Networking

The future Airborne Network will interoperate with a variety of platforms in a wireless environment very different from the fixed commercial networks. This project develops an overall management scheme to control this.

CN-09 Advanced Tactical Networking

This MSR will attempt to create a comprehensive set of algorithms and protocols that will provide a wireless networking solution.

Tour E-05 Enabling Technologies for Mobile Communications

This project will address the development and demonstration of new antenna elements that can be used to produce multibeam phased array apertures for the airborne environment.

Netted Sensors

SE-02 Adaptive Sensor Tasking and Control

This project develops a Markov Decision Process (MDP) adaptive sensor tasking and control algorithm to optimize sensor management in a real time 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.

ISR Information Fusion

IIP-01 Structured ISR Fusion

This MSR is using formal mathematical methods such as Random Set Theory and Category Theory as frameworks to design and implement fusion algorithms and to predict fusion system performance.

Tour IIP-04 ISR Forensics: Retrospective Analysis of ISR Data

This project is creating visualization tools including advanced tracking technology to support the forensic analysis of ground moving target indicator data with data from other sources of intelligence.

SE-09 Kaleidoscope: Multi-Sensor GMTI-VMTI Track Fusion and Visualization

This research will employ data visualization techniques to fuse multi-sensor target tracks into composite tracks. It will employ an extensible mobile target ontology to simplify machine-to-machine processes for TCT.

Service Oriented C2ISR Architectures

CS-02 Extending Enterprise Services to the "Tactical Edge"

The objective is to analyze the impact of unreliable, low bandwidth networks and computational limitations on the delivery of capabilities via Enterprise Services to the "Tactical Edge" environment.

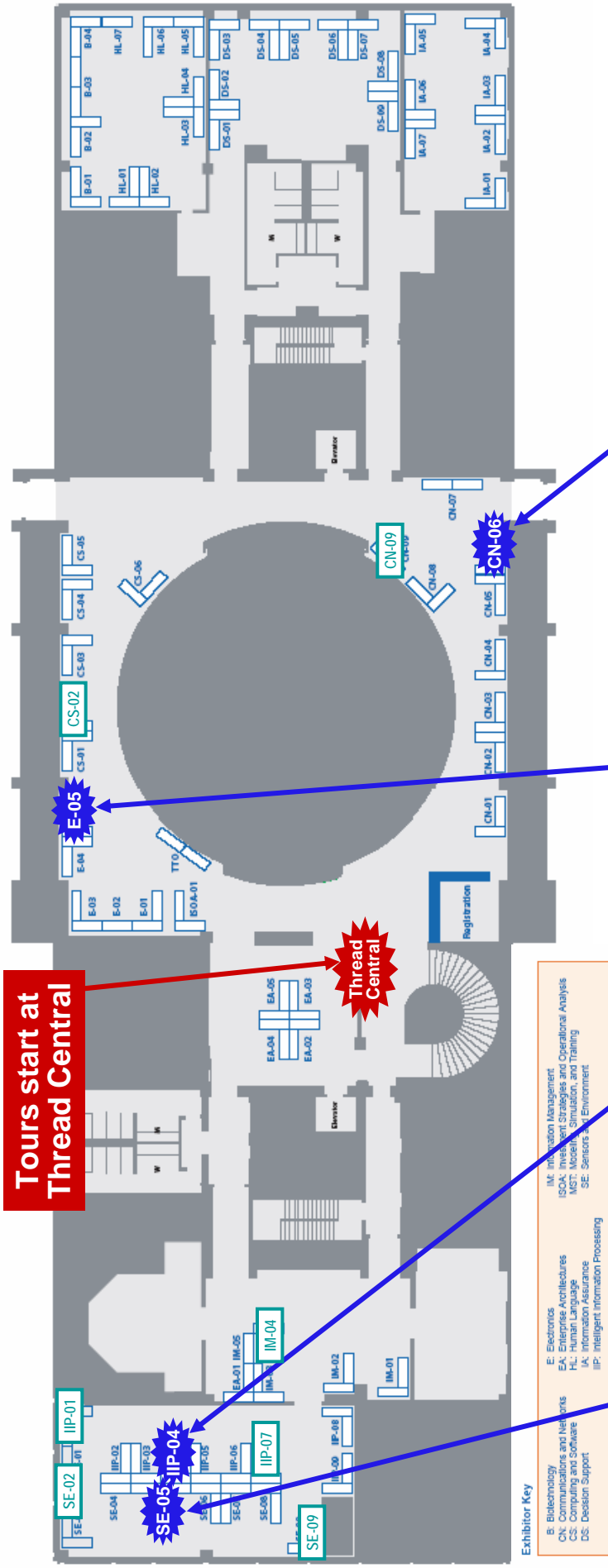
IM-04 Netcentric Data Sharing

Netcentric data sharing aims to provide data visibility, understanding, and interoperability.

IIP-07 Distributed Resource Brokering in Complex Network Envirs.

A study of brokering approaches for distributed resource discovery in peer-to-peer (P2P) networks.

Network-Based Airborne Battle Management



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
- IIP: Intelligent Information Processing
- IM: Information Management
- ISCA: Investment Strategies and Operational Analysis
- MST: Modeling, Simulation, and Training
- SE: Sensors & Environment

SE-05 Netted Sensor Megaproject	IIP-04 ISR Forensics: Retrospective Analysis of ISR Data	E-05 Enabling Technologies for Mobile Communications	CN-06 Policy-Based Management for Predictable and Sustainable Airborne Networking
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Thread Tour

Please also visit

SE-02 Adaptive Sensor Tasking and Control	SE-09 Kaleidoscope: Multi-Sensor GMTI-VMTI Track Fusion and Visualization	CS-02 Extending Enterprise Services to the "Tactical Edge"	IIP-07 Distributed Resource Brokering in Complex Network Envsirs.
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