

# Enhanced Planning and Integrated Coordination

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FAA/MOIE

The logo for the MITRE Technology Program, featuring a stylized graphic of stacked blocks in yellow and orange to the left of the text.

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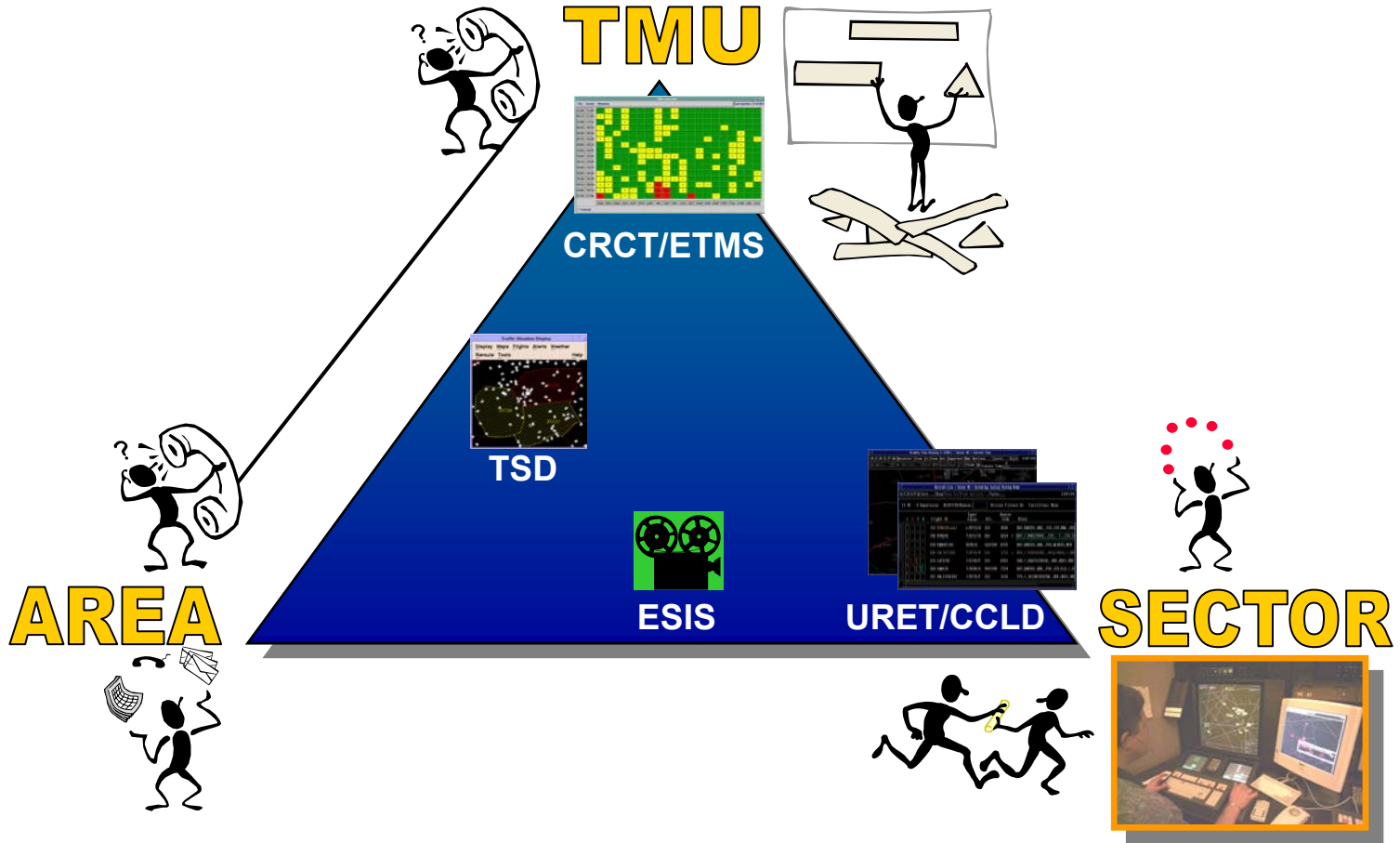
# Problem

- **Operational Supervisors (OS)/Controllers-in-Charge (CIC) rely on information from the Traffic Management Unit (TMU) and sectors to manage area resources and respond to Traffic Flow Management (TFM) initiatives.**
- **OS/CIC have a limited set of integrated decision support capabilities available to support their operational needs.**
- **Can an integrated set of area-specific capabilities improve the situational awareness and efficiency of the OS/CIC, facilitate collaborative decision making, and improve the overall performance of the NAS?**
- **Can these capabilities reduce overloaded sectors, promote more timely decisions, and eliminate or reduce unnecessary traffic flow constraints?**

# Background

- **The responsibilities of the OS/CIC are to ensure that (1) air traffic traverses the area in a safe and efficient manner, and (2) sector controllers implement TFM initiatives in a timely manner.**
- **In the current environment, OS/CIC rely on non-automated cues and non-integrated decision support tools to accomplish this:**
  - **For predictions of traffic volume, OS/CIC depend on visual observation of activity within area, the traffic count at each sector, ETMS information, historical traffic flows, and personal experience.**
  - **For predictions of complexity, OS/CIC depend on general observations of activity on each sector display monitor and observations or manipulation of a “look-ahead” function on URET/CCLD.**

# Background



# Objective

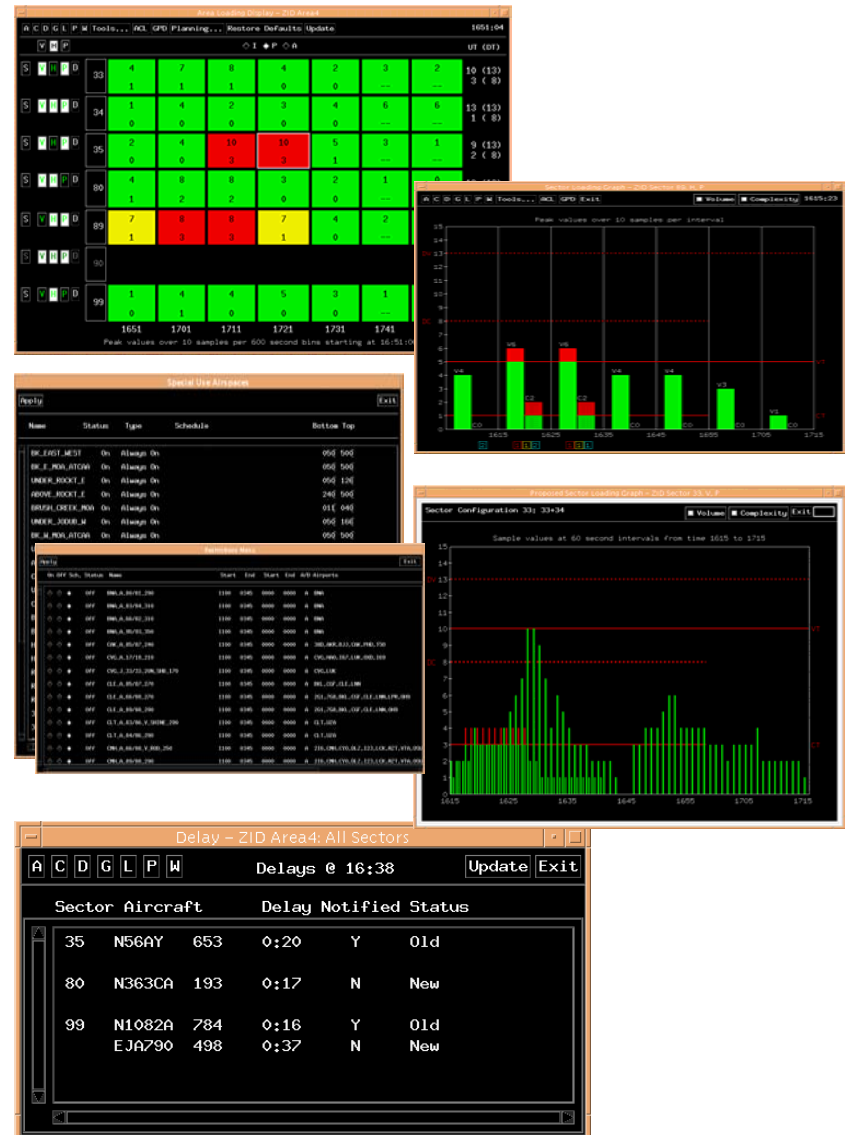
- **Understand information needs of the Operational Supervisor**
- **Illustrate Area capabilities that support information needs of the Operational Supervisor**
- **Validate concept and information needs, demonstrate working model, identify additional needs, and analyze potential benefits**

# Activities

- **Create Integrated Operational Concept of Use documentation**
- **Design working model that supports demonstration and validation**
- **Utilize CAASD ATC simulation capabilities for human-in-the-loop experimentation using operational personnel as subjects**
- **Conduct workshops to collect and analyze performance metrics and subjective OS/CIC feedback**

# Demonstration

- Automated warnings of potential sector overload
- Actual and predicted volume and complexity data
- Automatic delay notification for aircraft in each sector
- Access to area-specific and facility-specific information
- Capabilities to analyze changes to airspace and sector configuration



# Impacts

## ■ Customer Operational Mission

- Directly impact FAA goals for safe and efficient flow of air traffic and implementation of TFM initiatives
  - Fewer unanticipated traffic flow disruptions due to heavily loaded sectors, less need for TFM initiatives and reduced potential for Operational Errors
  - More effective implementation and more timely removal of TFM initiatives

## ■ Relevant knowledge capture and dissemination

- Broaden CAASD knowledge of Area Supervisor mission and needs and their applicability to other En Route research as well as integration with TFM and ATC

# Future Plans

- **Develop Knowledge Transfer documentation**
- **Validate needs and concepts**
- **Enhance existing capabilities and develop additional capabilities, as needed**
- **Analyze potential benefits**
- **Explore integration issues and opportunities**