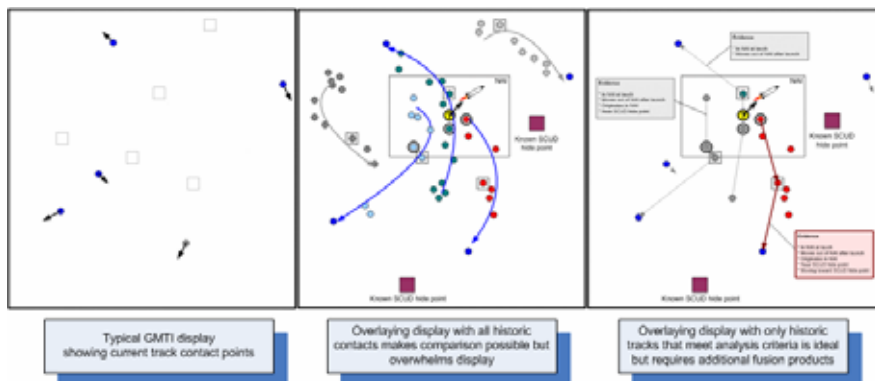


BINAH

Battlespace Information and Notification through Adaptive Heuristics



Dynamic UI Adapts to Users Tasks and Information Needs

BINAH is an agent-based, information display framework that transforms data from diverse sensors and information sources into an intuitive C³ decision-support system. It is designed to act as a testbed for cognitive systems research into data fusion, including situation and threat assessment, intelligent display management, user modeling, and resource management.

- Adapts to the user's changing tasks and work contexts; intelligent user interface changes the mix and display characteristics of data sources as needed to keep up with the warfighter's changing demands
- Models rapidly changing events and priorities for improved situational awareness and decision-support
- Reduces number of manual data transformations, increasing comprehension while minimizing fatigue
- Supports shared intermediate and final work products
- Reduces specialized training requirements

Agent-based Intelligent Data Pipeline

BINAH is an intelligent, reasoning data pipeline. Our approach has been to develop a framework of cooperative intelligent agents that model the warfighter, the warfighter's tasks, the common operating picture, and agent-generated inferences about the incoming data streams and display systems to customize data delivery to the warfighter. The BINAH framework allows the incorporation of a wide range of agent types and technologies to perform information fusion, filtering, analysis, and annotation.

BINAH Data Fusion Capabilities

BINAH's set of base capabilities to support data fusion research include:

- Publish and subscribe integration with the Air Force's XML based Joint Battlespace Infosphere (JBI) to enable easy incorporation of realistic datasets.
- A sophisticated and efficient qualitative spatial and temporal reasoning component, integrated with the ESRI's MapObjects GIS library, a COTS library written in Java.
- A visualization system based on interpreted style sheets capable of presenting dynamic heterogeneous data, allowing for rapid fusion display prototyping and experimentation. Current display output is rendered using ESRI's MapObjects but could be configured any Java display library.
- Specialty languages for (a) encoding commander's information management heuristics (Anex) and for (b) encoding pre-designed visual display styles that can be selected and composed on the fly by the system automation (Presto!).

SoarTech POCs

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