Fusion Architecture

Mr. Edward M. Starczewski
(315)330-7127
stare@rl.af.mil

Presentation Outline

- Problem Description
- Technology Background
- Fusion Architecture
- Progress
- Future Research
- Summary

Problem Description / Approach

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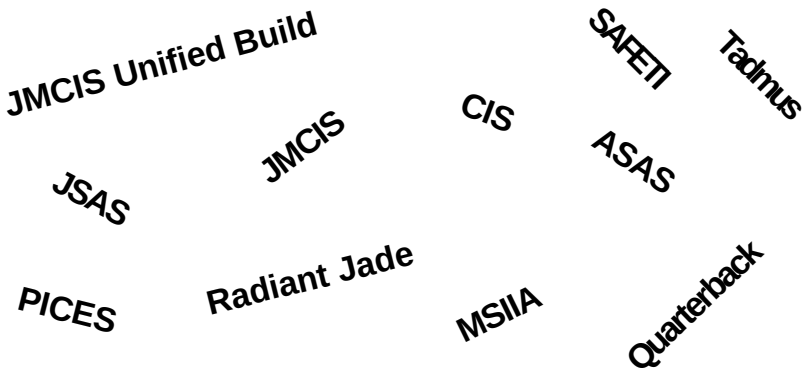
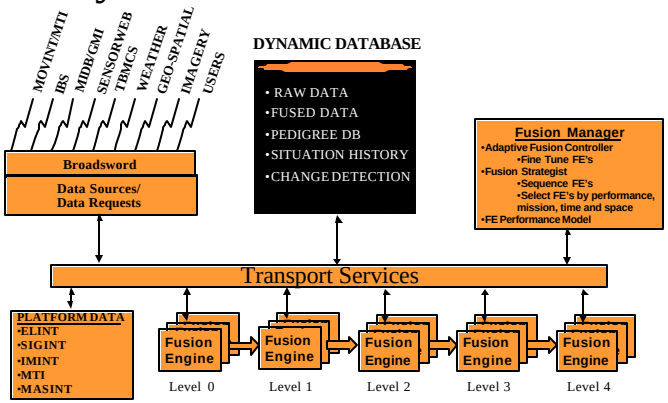
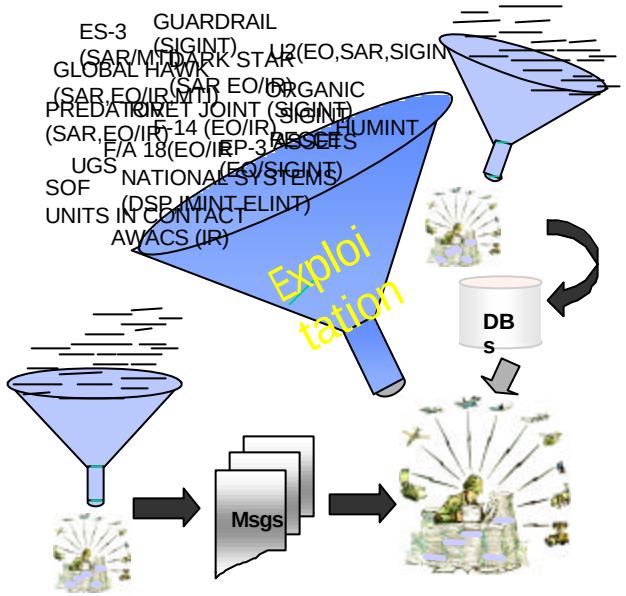
- Problems:
  - Every Advance in Fusion Results in a New System
  - Existing Fusion Systems Don't Interoperate
  - Information overload

- Approach:
  - Open, Standards Based Architecture
  - Fusion management
  - Adaptive fusion control
  - Component Testing
  - Globally Distributed







Adaptive Fusion Control
Multiple Fusion Engine Configurations

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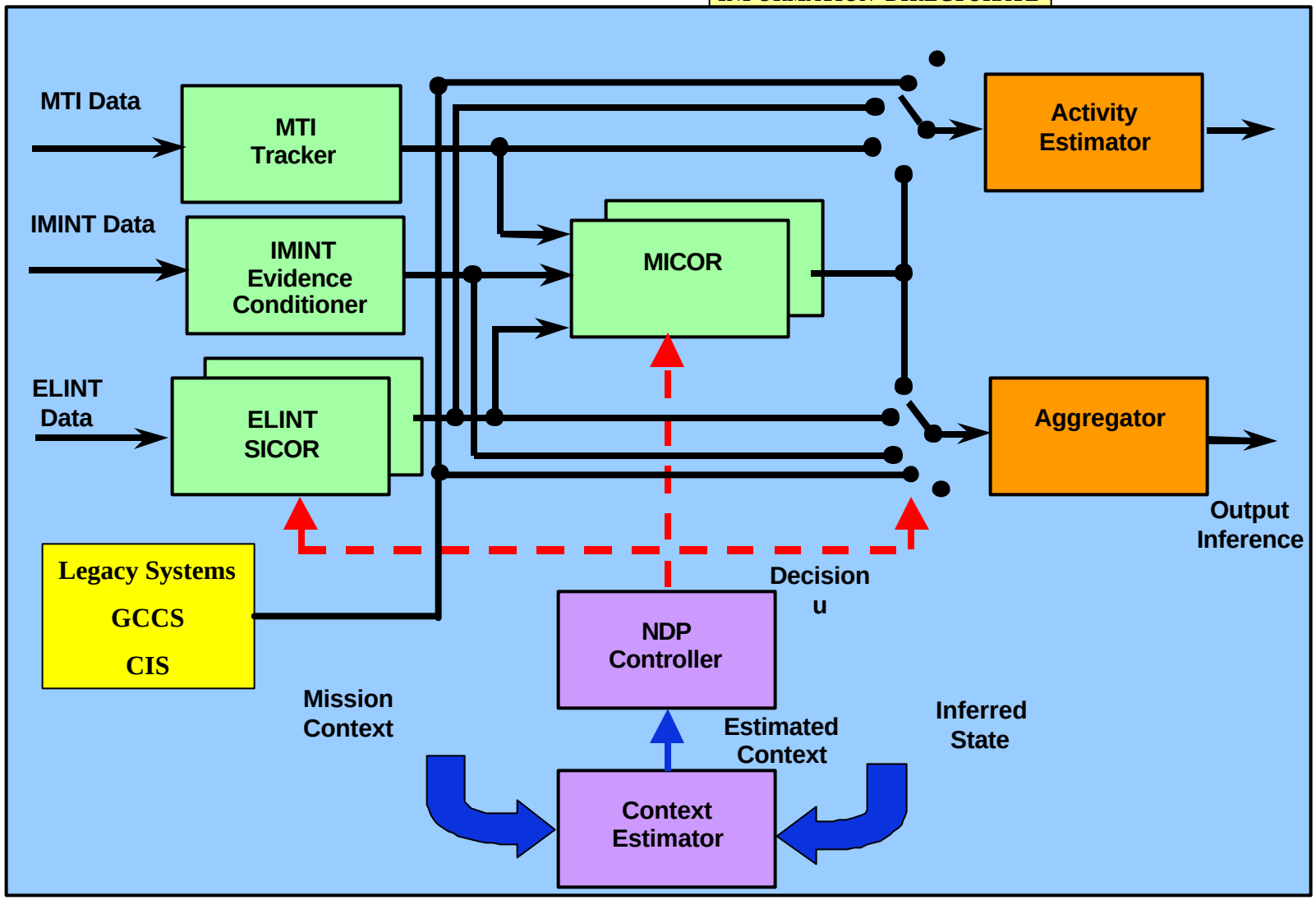

Data Ontology

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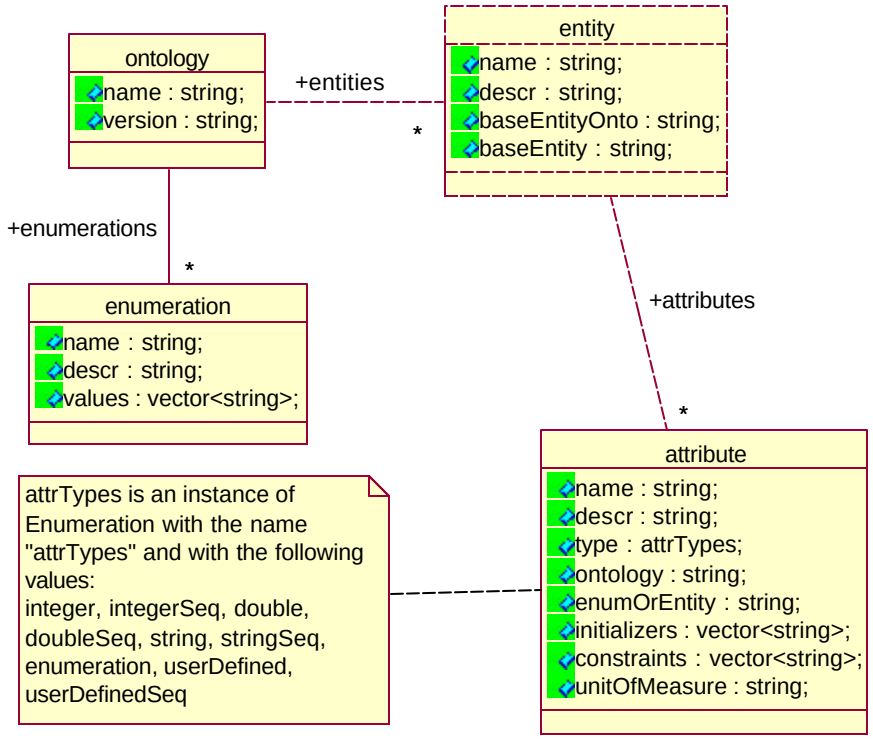

- An Ontology Contains The Semantics For A Given Domain
- Create A Distributed Architecture That Is **Designed From The Start To Support Change**
- Database And Data Transport Interfaces Can Be Decoupled From The Ontology

Distributed Fusion Architecture

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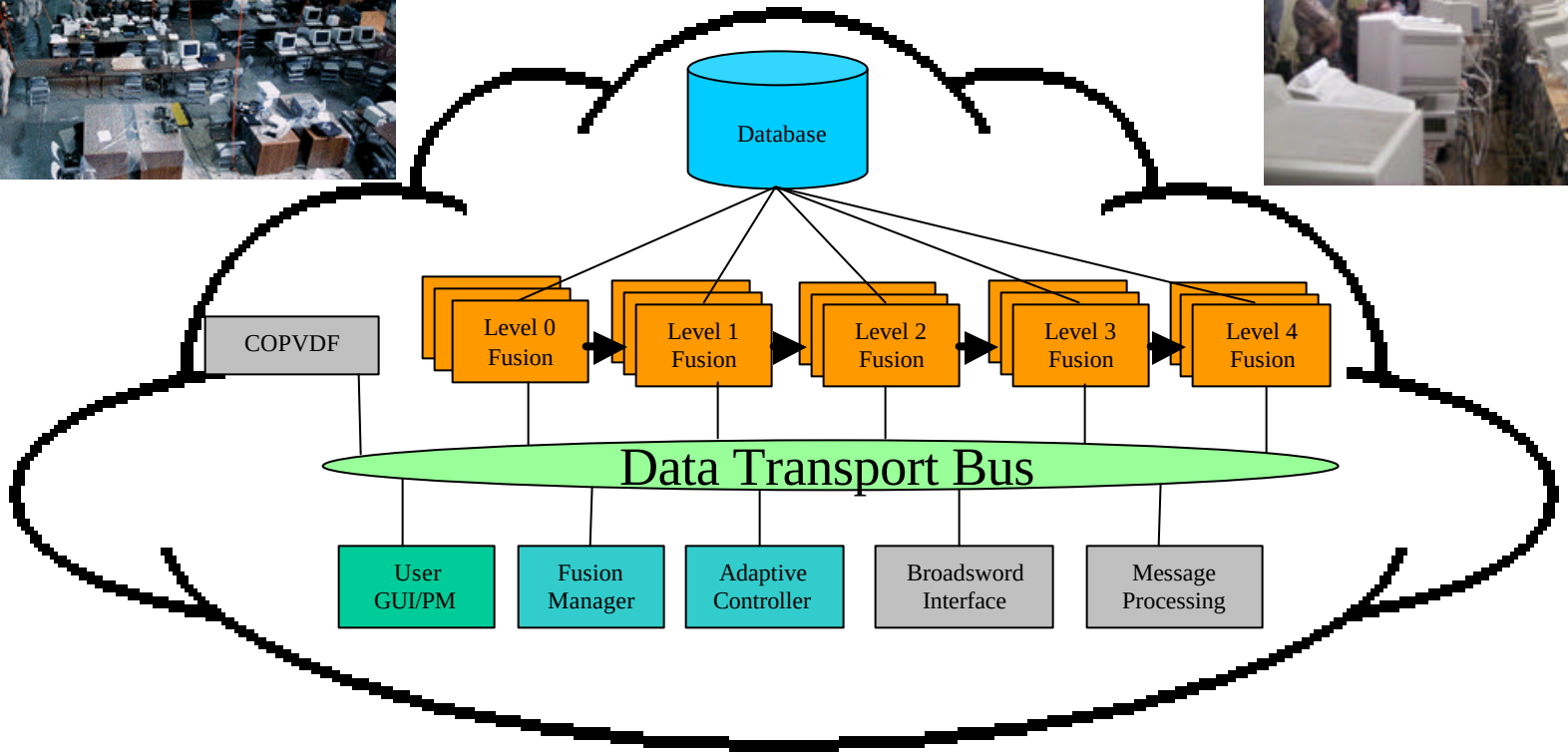

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USCINCPAC
Camp H.M. Smith, Hawaii

CINC

Architectural Progress

- **Accomplishments**
  - Legacy Fusion System Integration
  - Fusion Mediation
  - DB Schema and API Interfaces
    - Ontology
    - Data Transport
  - Documentation
  - Fusion Engine Encapsulation
    - Multiple Intelligence Correlator
    - Nodal Exploitation Analysis Tool
  - Greedy Control Technique For Adaptive Control
- **Future**
  - Knowledge Based Technology
  - Agent Based Software
  - Data Transport Technology
  - Adaptive Control Technologies
  - Measures of Performance
  - Uncertainty Representation/Pedigree

Summary

- Fusion Science Is Immature
- Working With Partners To Field Fusion Architecture
- Developing Architecture That Leverages New And Old Technology
- Investigating Technology Barriers

Questions????