C2 Enterprise Integration

BGen Robert Latiff
Vice Commander

Why Enterprise Integration?

Changing Warfighter Environment

Autonomous Systems	Integrated Aerospace Battlespace Solutions
Aging Aircraft	Aging Systems
Products	Military Capabilities
Point Solutions	Effects Based Modernization
Platform Centric Mgmt	Cross Cutting Visibility/ Leadership
System Focus	Sys of Sys Architect
Product Line Mod Planning	Capstone Capability & Core Competencies
Single Manager Focus	Integrated Senior Leadership Focus

Increased Ops Tempo

Dispersed in Time/Space

Information Centric

Knowledge vs Data

Environment Requires Effects Based Capabilities

ESC Role in C2 EI

- **"To ensure C2ISR integration & interoperability issues are effectively addressed, the Electronic Systems Center (ESC) is assigned the lead role and authority for integration of Air Force C2ISR systems. ESC/CC, as the DAC for C2 Enterprise Integration, will direct actions to ensure the integration of C2ISR systems, and to assure their interoperability with Joint and international systems."**

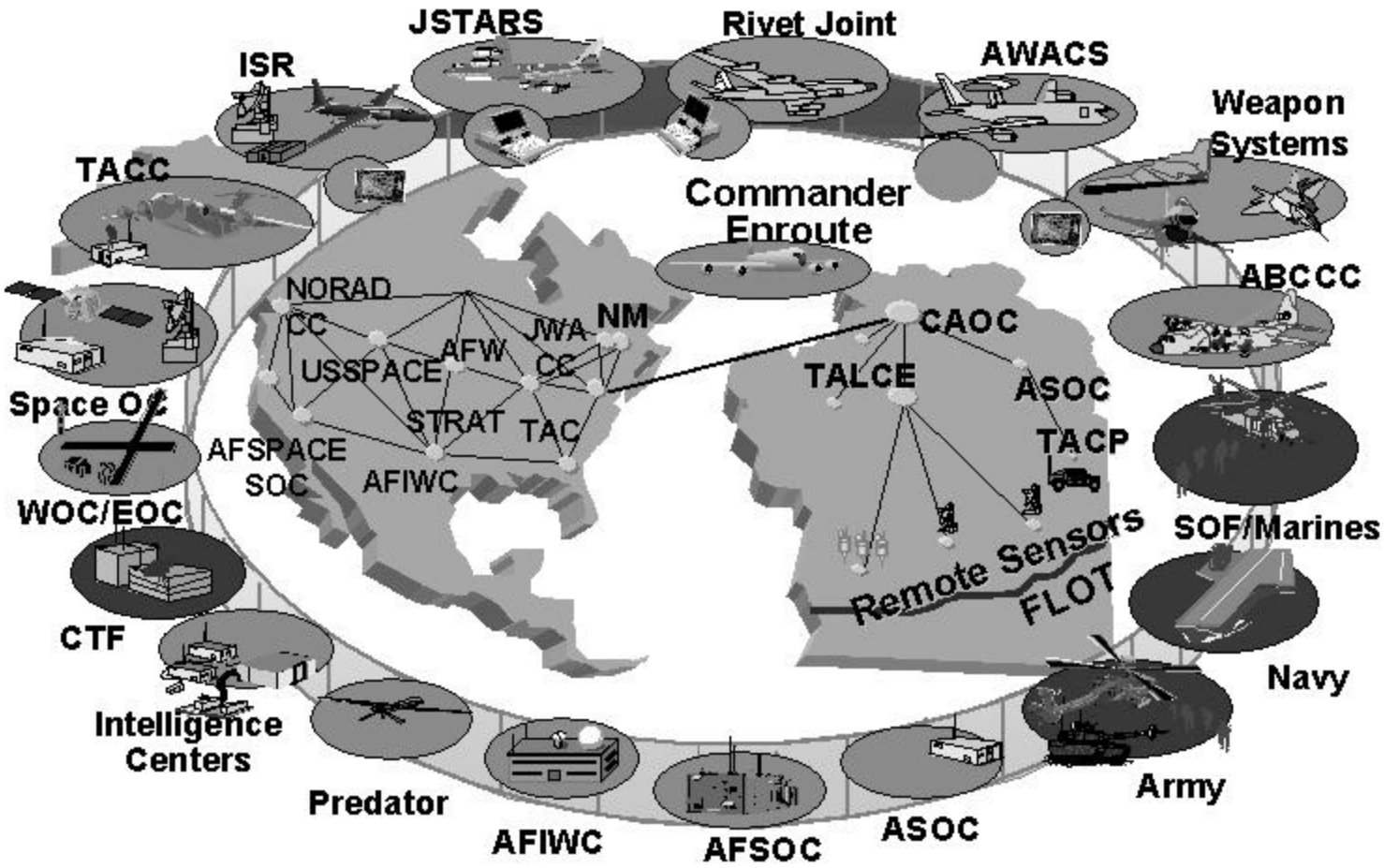
- **"ESC will also lead C2 Enterprise Integration planning and identification of required resources to ensure all USAF C2ISR systems are integrated and interoperable within the USAF and DoD C2ISR framework."**

Lawrence J. Delaney, Asst Secretary of the Air Force (Acquisition), 06 Feb 01

Strategy for Delivering Integrated C2ISR

- Nodal Approach
- Architecture-driven/Capability-based
- Integration/interoperability-focused
- Experiment-driven & Evolutionary Acquisition/spiral Development-enabled
- Modeling and Simulation

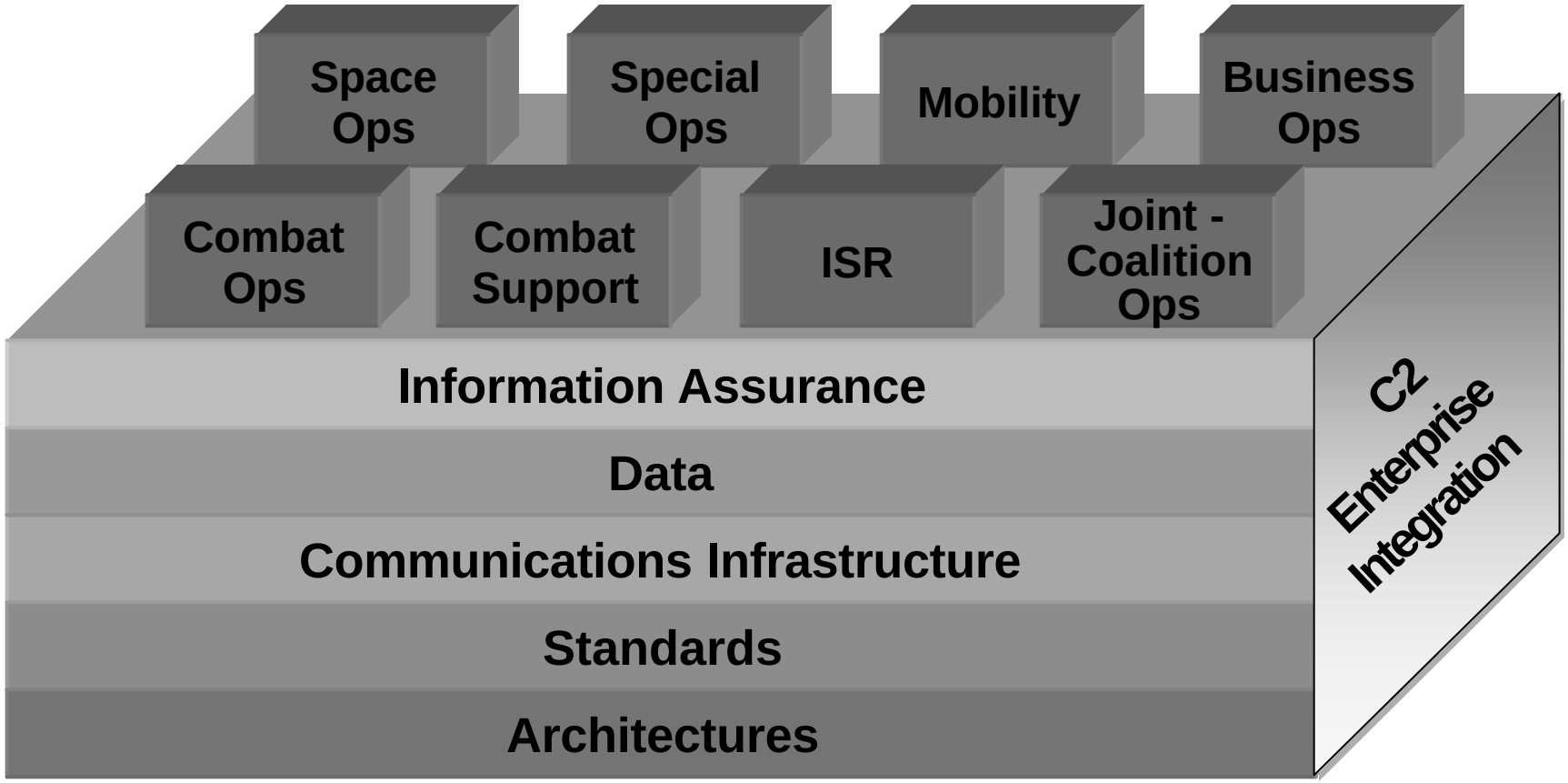
Integrated C2ISR



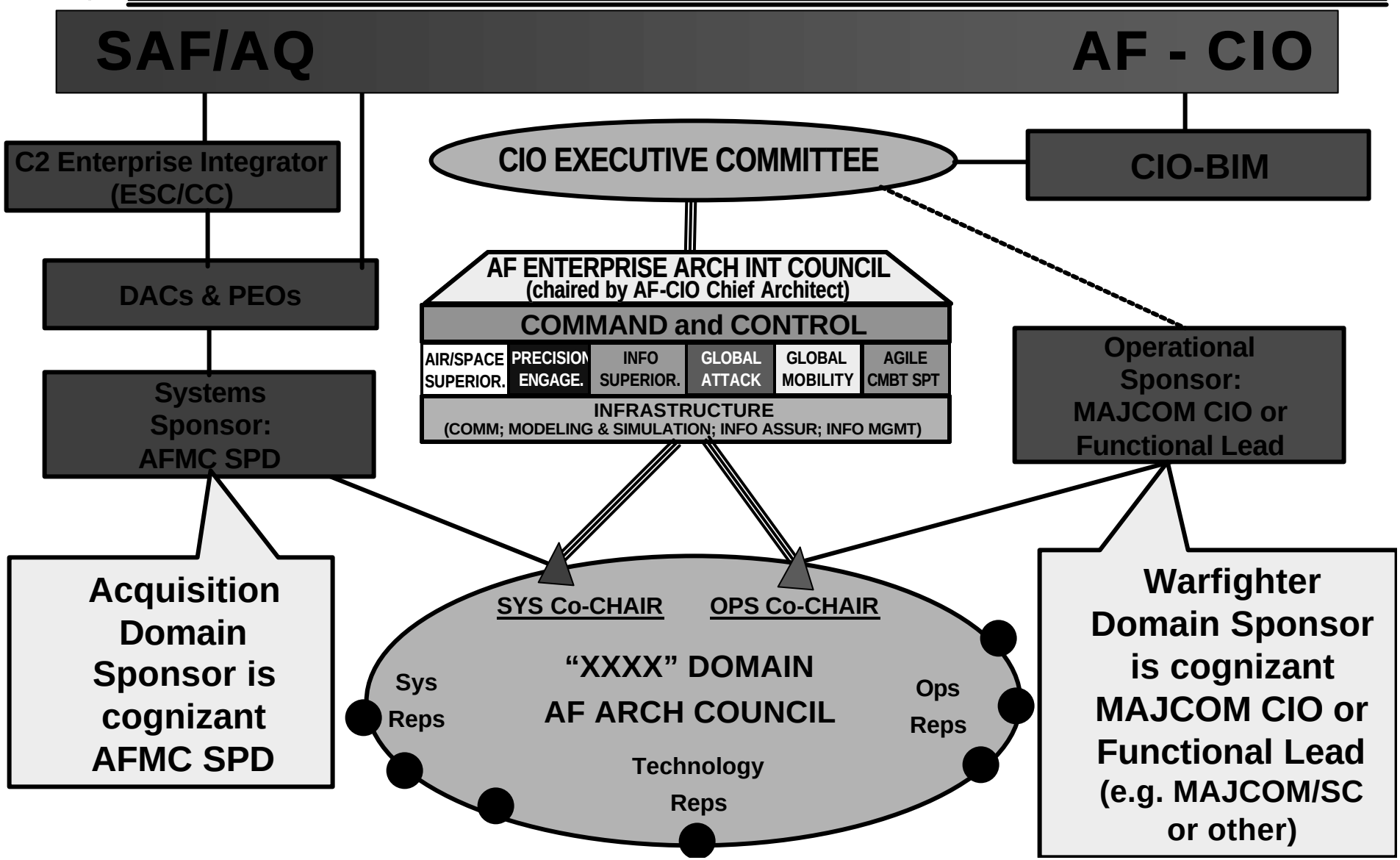
Efficient & Cost Effective
Decision Quality Information to the Warfighter

Electronic Systems Center

C2ISR Center of Excellence



Architecture Council Management



Analysis of Roadmap Alternatives (ARA)

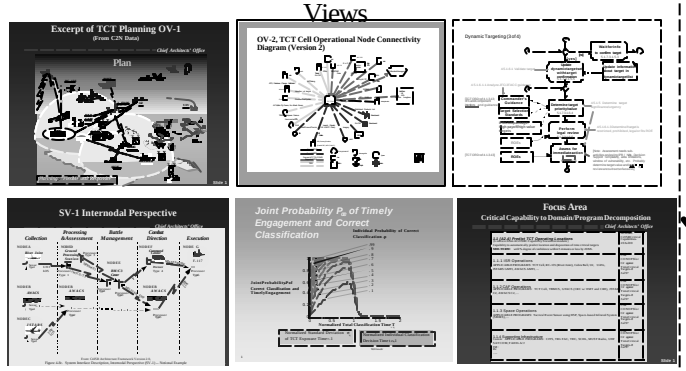
<u>Purpose:</u> Build an integrated, mutually supportive materiel-solution input to the annual C2ISR APOM/POM process

Products: Fully integrated Cross-Program Roadmaps for each Focus Area, backed by Architectures.

Feed Capability Decision Package

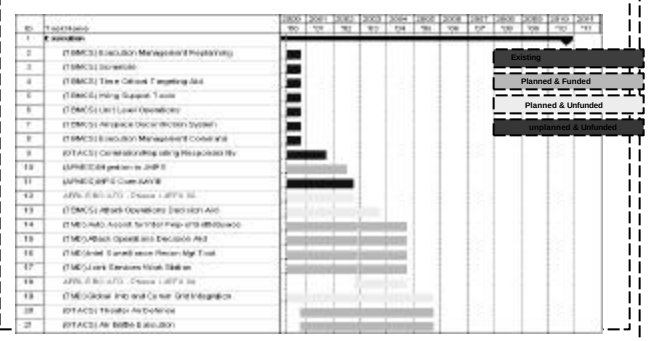
ARA Architecture

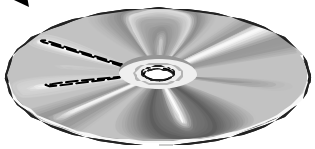
Sample Operational and System Architecture Views



Architecture is an underlying disciplined process relating needed Capabilities, Operational art, and Systems Engineering with good Business practices.

Sample Integrated Program Schedules

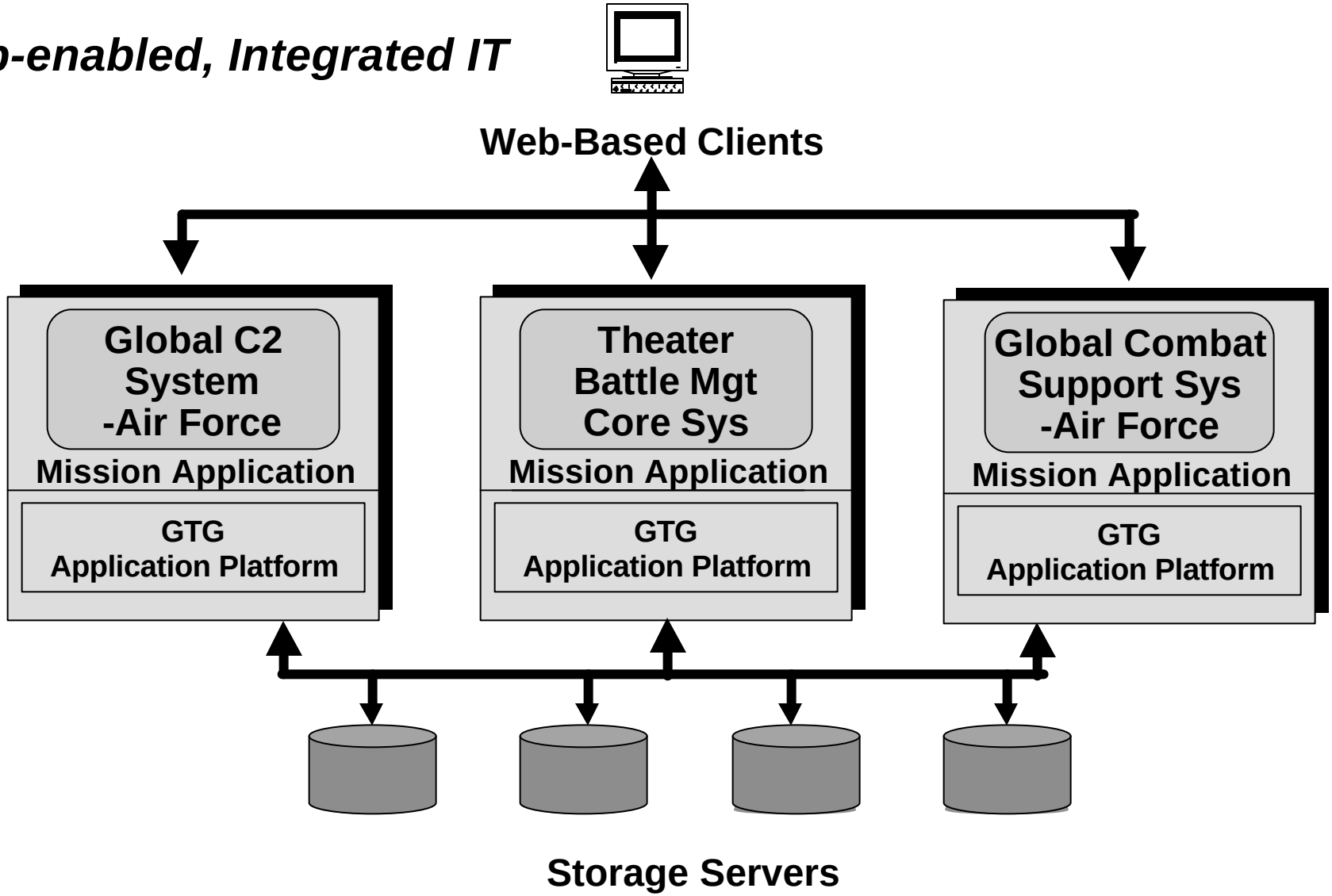




Focus Area Capability Decision Package (CDP) Inputs for POM/APOM

Example: Web-Based Integration

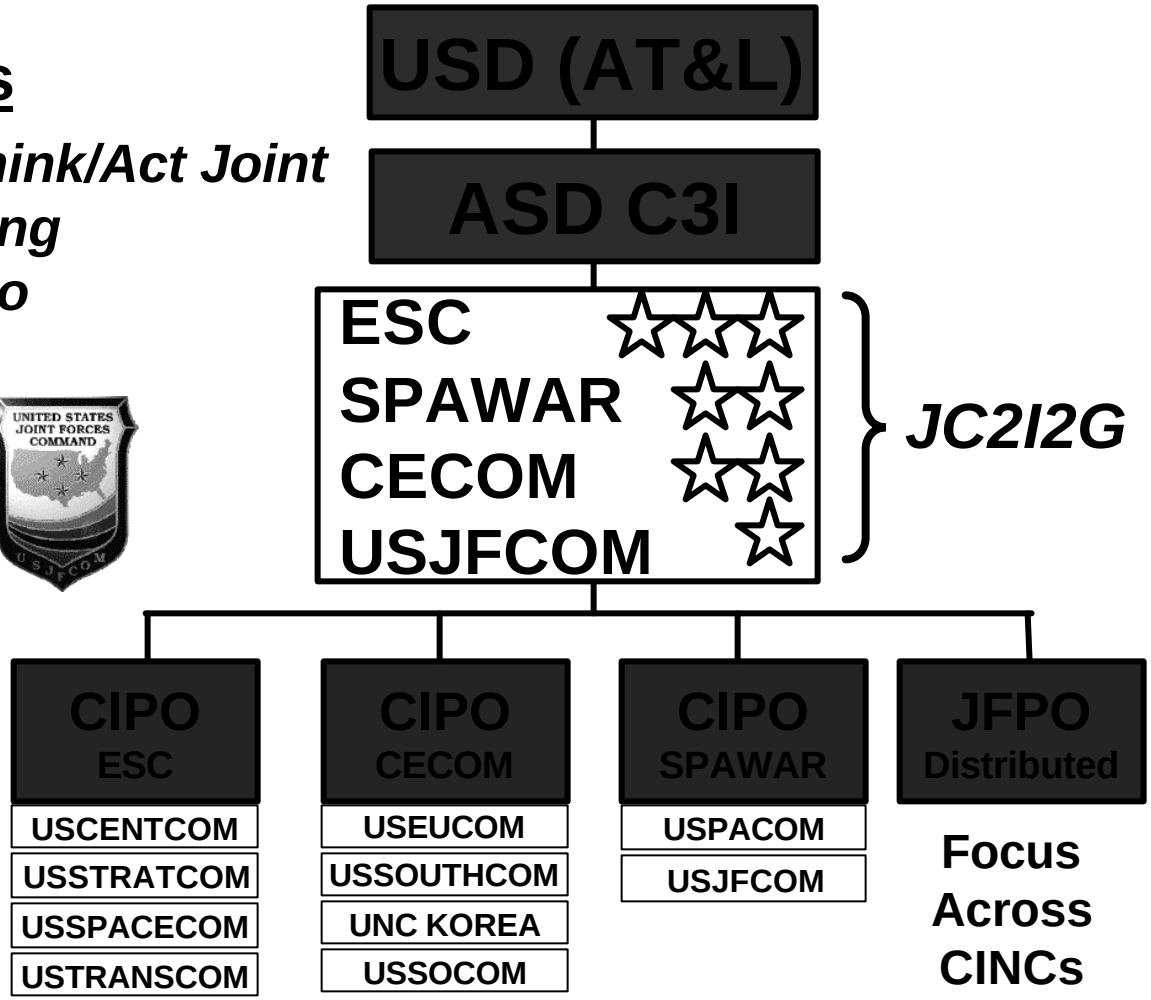
Web-enabled, Integrated IT



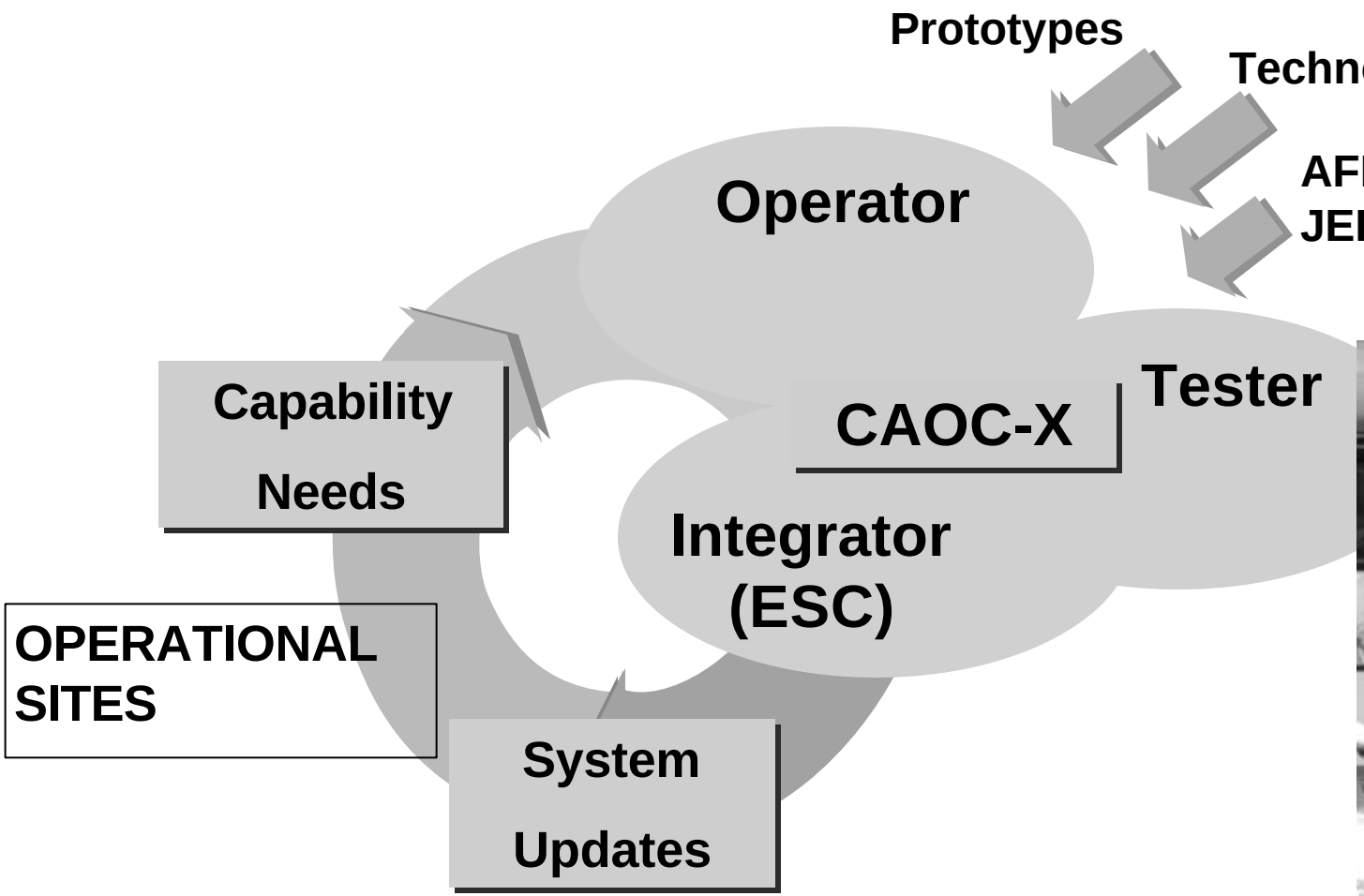
CINC Interoperability Program Office(s)

Key CIPO Challenges

- *Getting SYSCOMS to Think/Act Joint*
- *Joint Acquisition Teaming*
- *Embed CINC Ops Tempo*



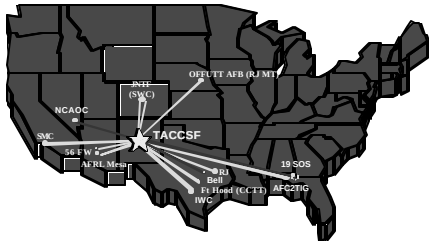
Combined Air Ops Center Experimental



Analysis Using Synthetic Battlespace

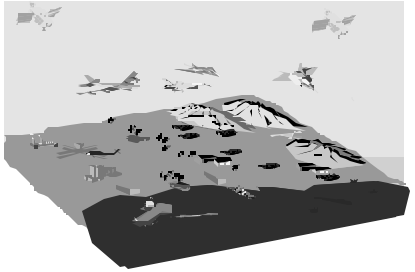
- **Immerses Acquisition Process Into Warfighter Environment**
  - Quicker Fielding – Avoid Redesign/Mistakes
  - Cost Avoidance – Total Systems Savings
  - Improved Product – Better Design/Operator Interfaces

WARFIGHTER



- Training
- Mission Rehearsal
- Ops Definition

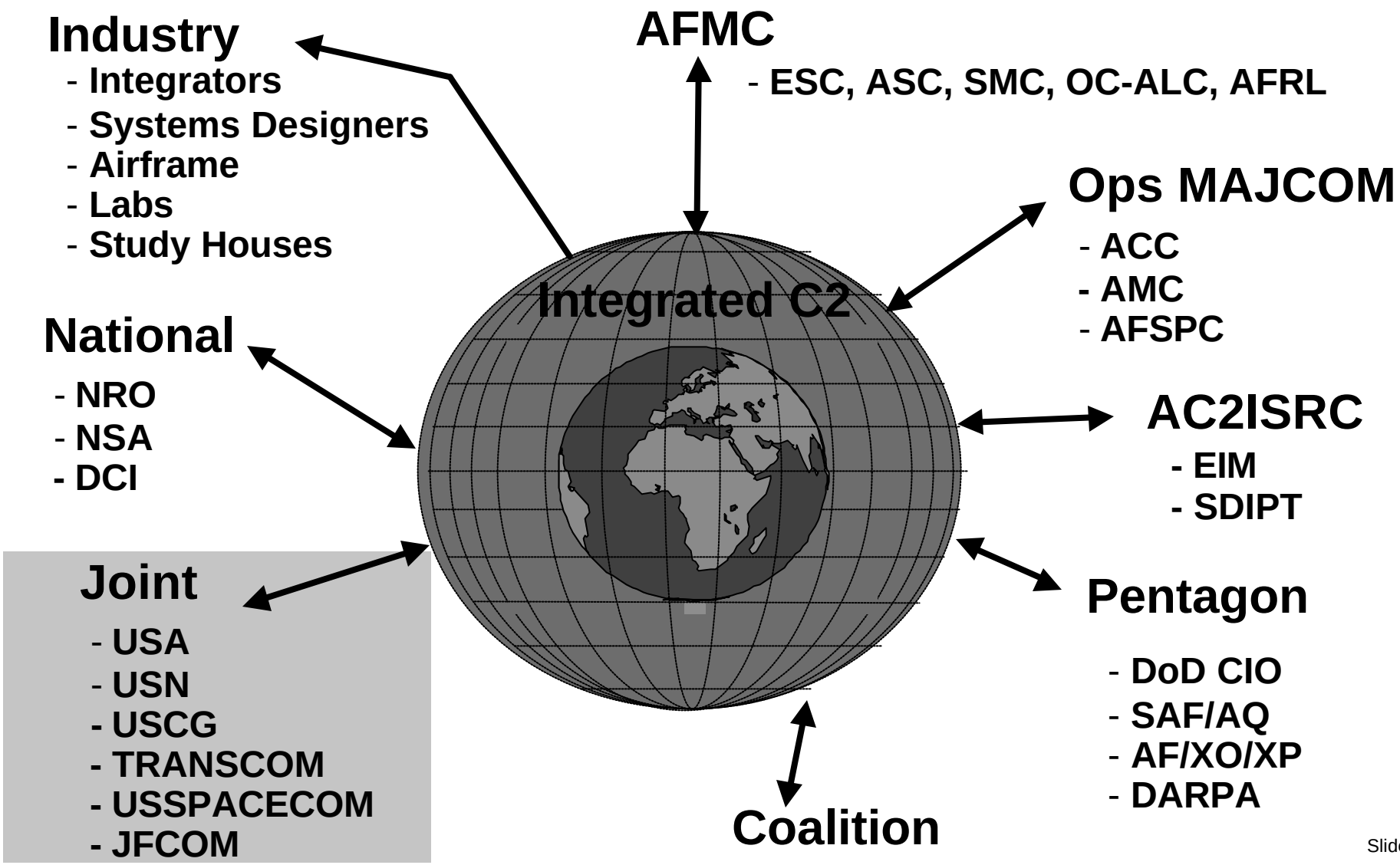
SYNTHETIC BATTLESPACE



- Repeatable
- Variable Resolution/Fidelity
- Verified/Validated/Trusted
- Distributed or Standalone
- "Corporate" Infrastructure

ACQUISITION

☆ Government Sites
★ Contractor Sites

- Technology Analysis
- Design Trades
- Systems Engineering
- Integration and Test
- Operational Testing

Partnerships for C2 Enterprise Integration