

A Proposal For A Department of Defense (DoD) Command and Control Strategy

Alfred V. Newman,
Ross W. Wheelwright

DoD C2 Vision

- **DoD C2 in a distributed net-centric environment must be based upon a flexible, expandable web-based strategy that allows for:**
 - Continuous growth of all DOTMLPF elements
 - Dynamic configuration/reconfiguration to meet evolving “operations today” needs
 - Rapid technology insertion
 - A near term implementation of all C3I elements with supporting communications and networking
 - Integrated enterprise level security, Network Operations (NETOPS) and Crypto
 - MILDEP development of truly unique services/applications to support respective C2 needs

Command and Control Strategy Drivers

- **The future vision of Command and Control - “Will be ENABLED by key Net-Centric communications and networking capabilities:**
 1. Transformation Satellite (TSAT)
 2. GIG Bandwidth Expansion (GIG-BE)
 3. Joint Tactical Radio System (JTRS)
 4. Net-Centric Enterprise Services (NCES)
 5. GIG Information Assurance Portfolio (GIAP)

- **Joint Command and Control (JC2) program AoA noted that 665 of 879 (76%) of Priority 1 gaps are in the Intelligence and Situational Awareness MCPs**

- **Implementation of the DoD Data Strategy in C2 will enable loose-coupling of services and applications using a common lexicon of C2 terms.**

- **QDR 2005 Joint Command and Control Decisions:**
 - Transform designated existing Service operational headquarters to fully functional and scalable Joint Command and Control Joint Task Force-capable Headquarters beginning in Fiscal Year 2007.
 - Establish a second operationally ready and immediately deployable Standing Joint Force Headquarters core element at the U.S. Joint Forces Command consistent with its responsibilities as Joint Force Integrator under the 2004 Unified Command Plan.
 - Automate and link key planning processes in a networked, virtual environment to enable real-time collaboration and rapid production of high-quality planning products.
 - Implement Adaptive Planning across the department by increasing the number of fully qualified planners, investing in advanced planning toolsets, and organizing planning staffs to exploit the advantages that new technology and highly trained, experienced planners provide.
 - Increase resources to develop software, tactics, techniques, procedures and other initiatives needed to support the Global Force Management System.

Iraq, Afghanistan & Katrina C2 Lessons In An Enclave World



1. C2 in Iraq moved to the Mil. Intel Enclave

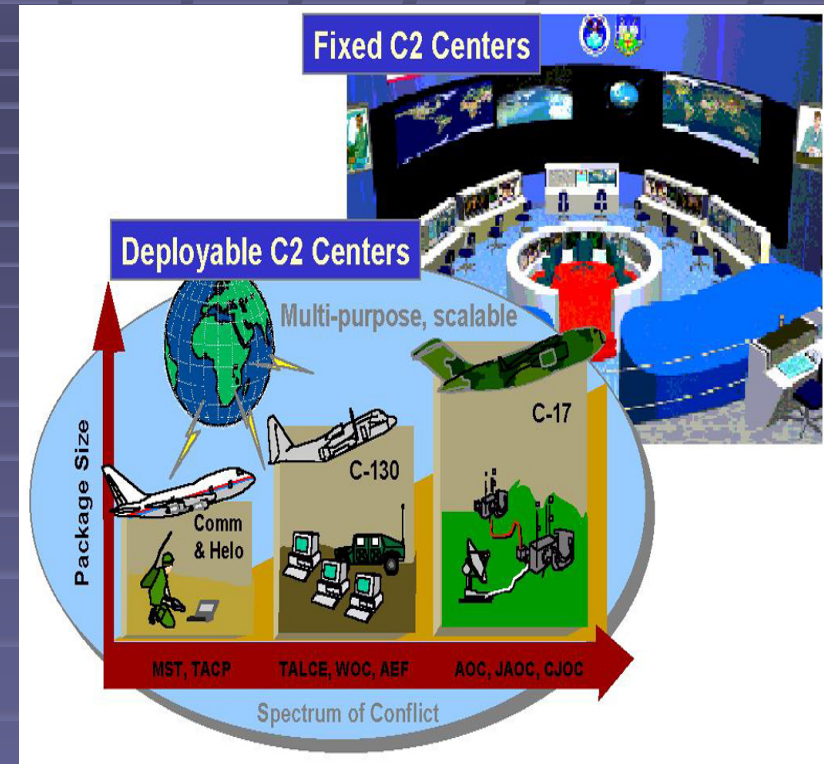
2. C2 in Katrina moved from Civilian to Military Enclave for the infrastructure (Intel was CNN vs. Mil. Intel)

Business Mission Area		Warfighting Mission Area		National Intelligence Mission Area	Allies, Coalitions, Partners	Department of Homeland Defense Mission Area						
Governance		Governance		Governance	Governance	Governance						
Installations & Environment	Logistics	Acquisition	Human Resources Management	Accounting & Finance (incl Strategic Planning)	Battlespace Awareness	Force Application	Protection	Focused Logistics	Battlespace Comms	In work	In work	In work
Enterprise Information Environment Mission Area				National Intelligence Enterprise Information Environment MA	Coalition Information Environment MA	DHS Enterprise Information Environment MA						
Governance				Governance	Governance	Governance						
Communications	Computing Infrastructure	Core Enterprise Services	Information Assurance	In work	In work	In work						

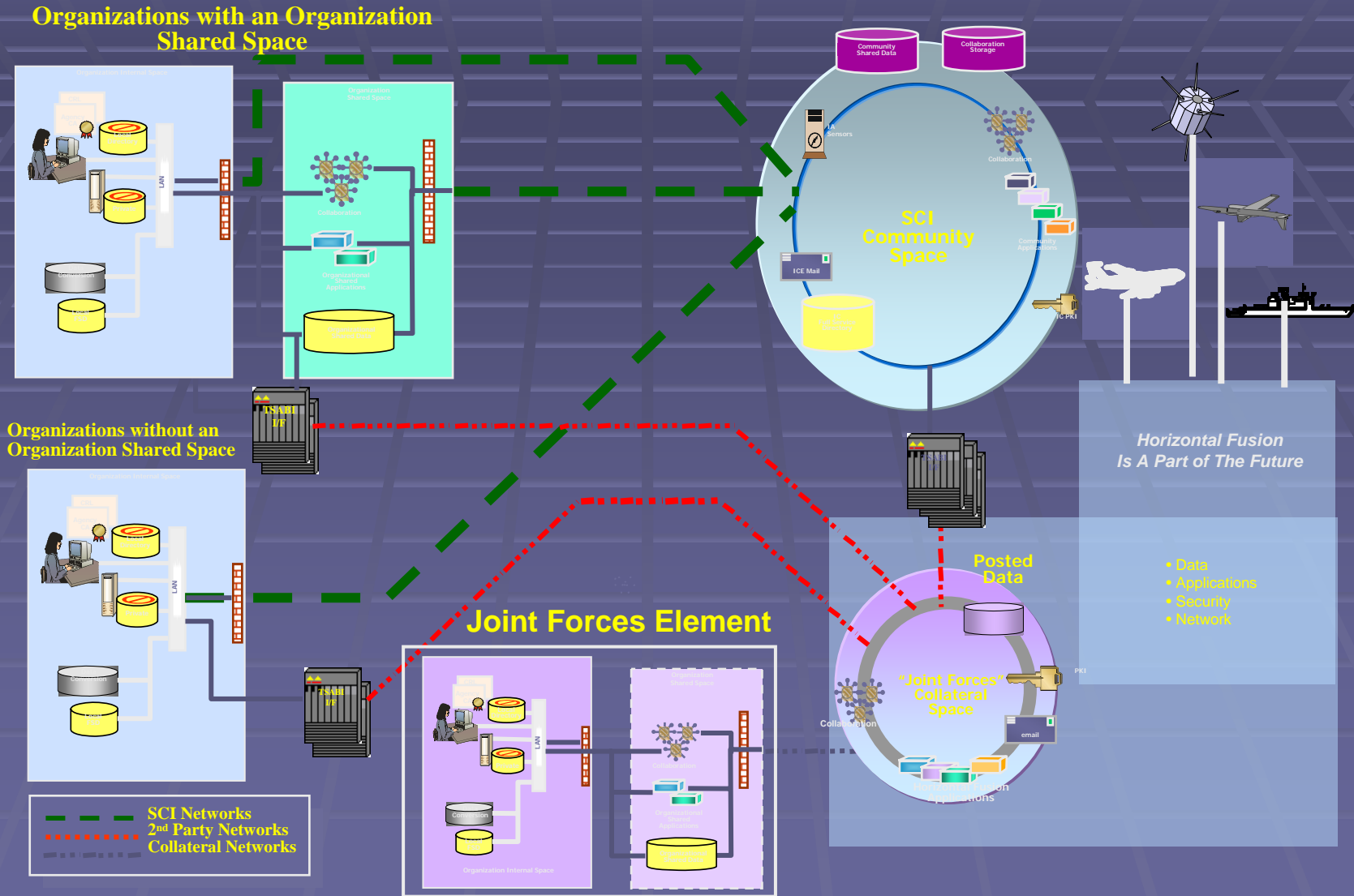
“C2 Is A Migrant Worker” – It Moves To The Enclave Where The Information and Infrastructure Exist to Perform The C2 Function.

Is The C2 Migrant Worker A Recent Phenomenon?

- No!
- C2 occurs everywhere that decisions are made.
- Different “levels” of C2 capability require different functional C2 environments: Fallujia to POTUS
- All require the right C2 and communications capability to make correct decisions



Enclaves – Operational Reality Today and Near Term



What Must Net-Centric C2 Look Like?

Command and Control

Fixed C2 Centers

Mobile C2 Centers

C2 COOP? – Everywhere & Anywhere



- Net-Centric C2 will still have fixed, mobile and COOP C2 nodes

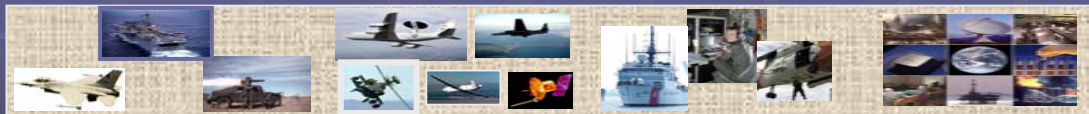
- COOP will be everywhere all the time (no data loss or facility loss possible)

- C2 will become a networked, distributed, redundant, net-centric capability that relies upon Intelligence and the GIG infrastructure

Domain View Of C2

UNCLASSIFIED

Command and Control Users



Horizontal Cross-Cutting Enterprise Mission Area

Command and Control



Intelligence



Vertical Mission Area

Domain Services

Business Mission Area	Warfighting Mission Area	National Intelligence Mission Area	Department of Homeland Security	Allies, Coalitions, Partners
Governance	Governance	Governance	Governance	Governance
Logistics Installations & Environment Human Resources Management Accounting & Finance (Incl Strategic Planning)	Battlespace Awareness For For Battlespace Comms	In work	In work	In work

Services Environment

Enterprise Services

Enterprise Information Environment Mission Area				National Intelligence Enterprise Information Environment MA	DHS Enterprise Information Environment MA	Coalition Information Environment MA
Governance				Governance	Governance	Governance
Communications	Computing Infrastructure	Core Enterprise Services	Information Assurance	In work	In work	In work

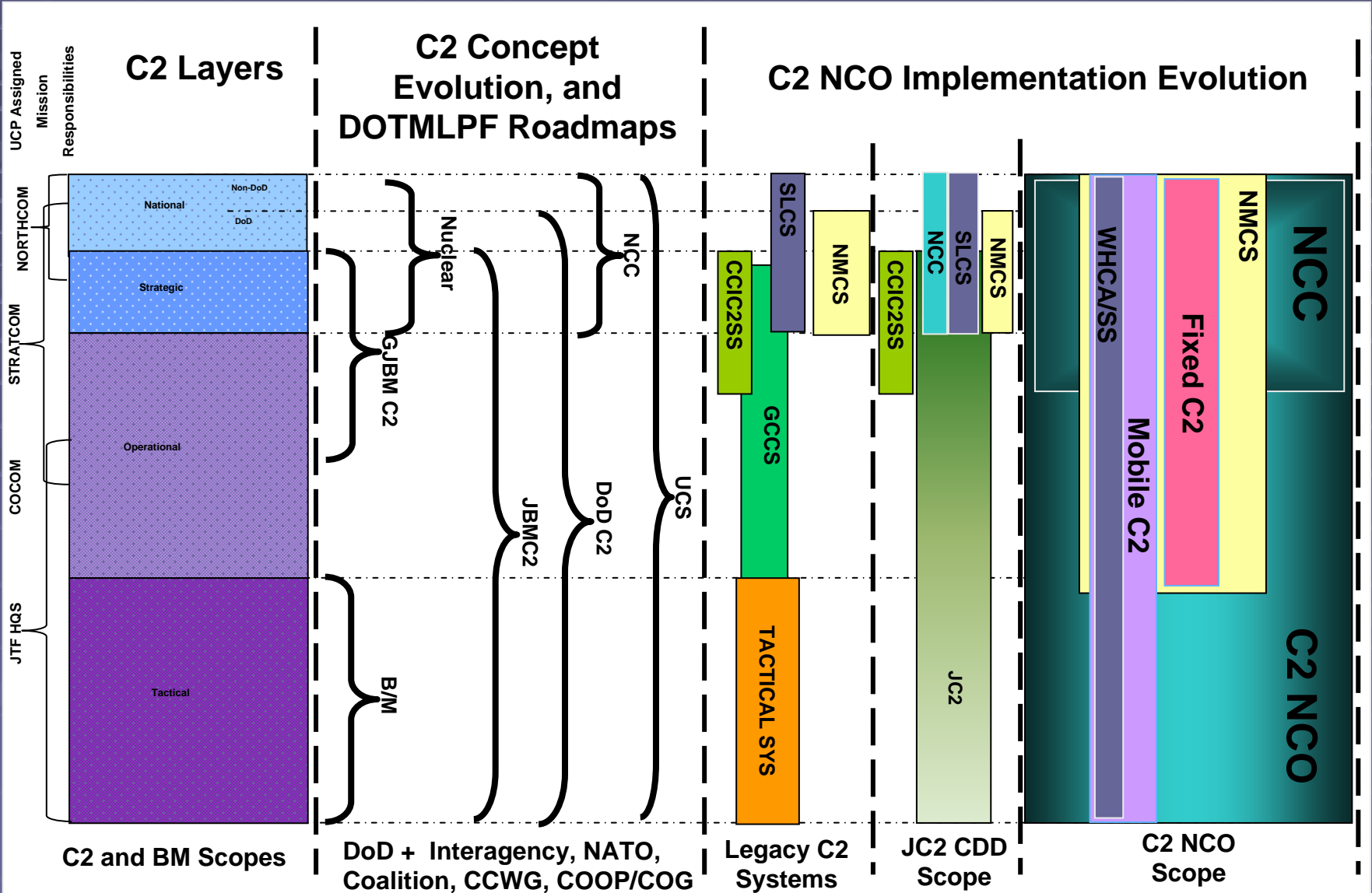
Communications

Space
Airborne
Terrestrial

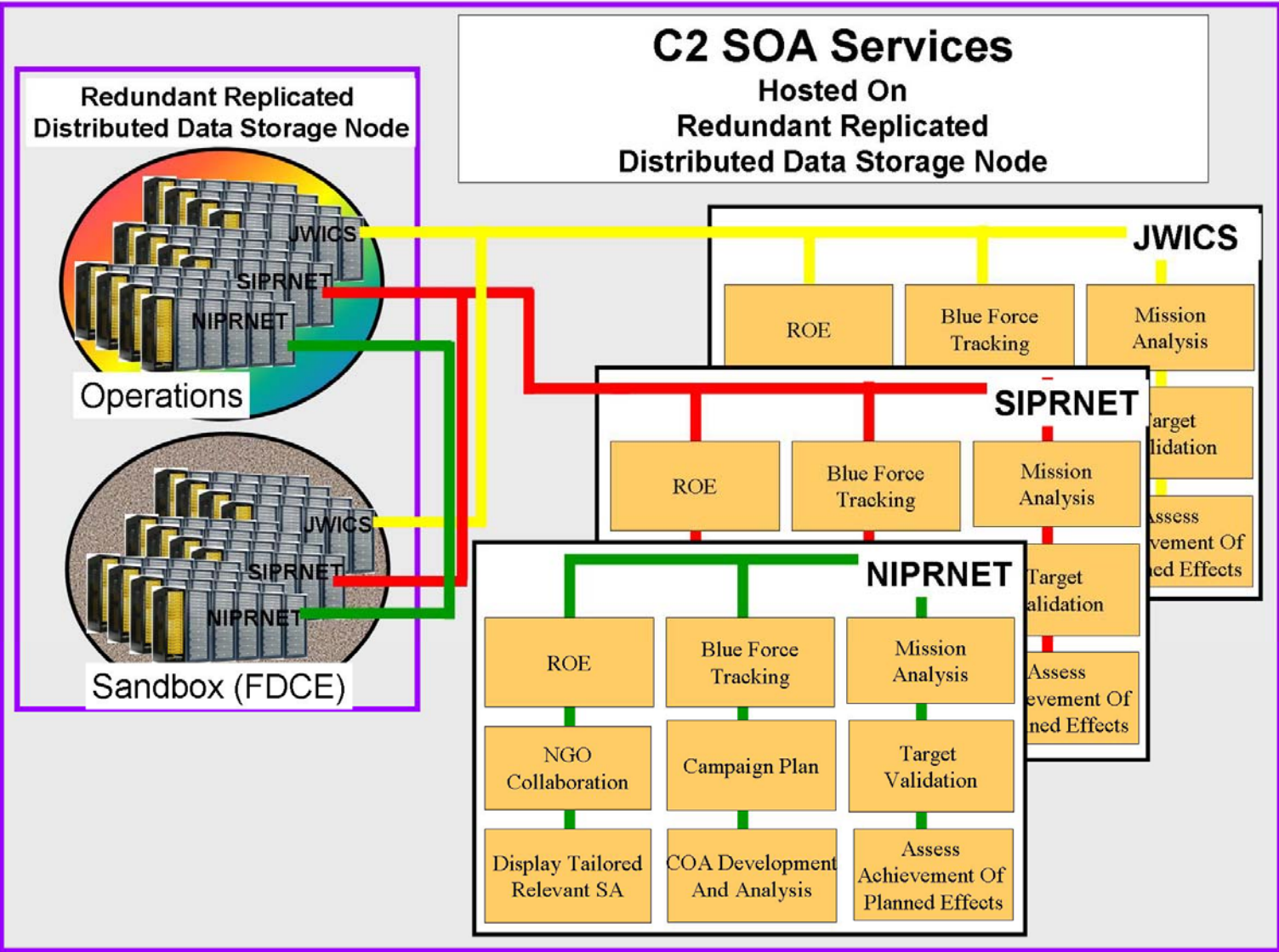
Commercial	AEHF	TSAT	MILSTAR	IC	Commercial	Commercial/Unique
IPv4/6	IPv4/6	TADIL	MILSTAR	IC	UHF/VHF/HF	TADIL IPv4/6
DISN	GIG-BE	WHCA/SS	CIP Hardened	IC	AT&T / TELCO	DISN/GIG/Unique

UNCLASSIFIED

C2 "Net Centric Operations" Strategy



GIG C2 SOA Services

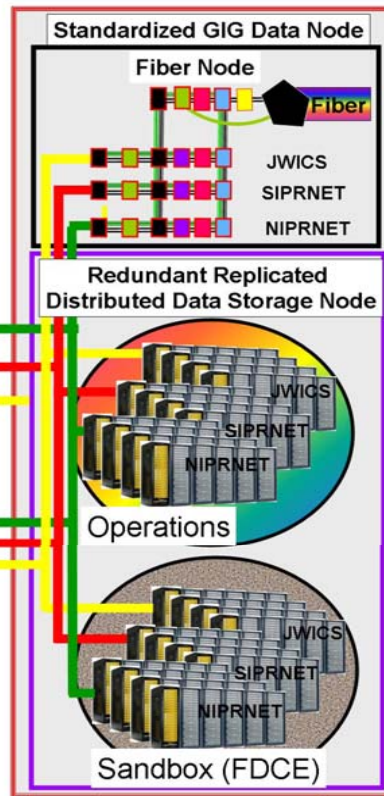


Command Center Configuration



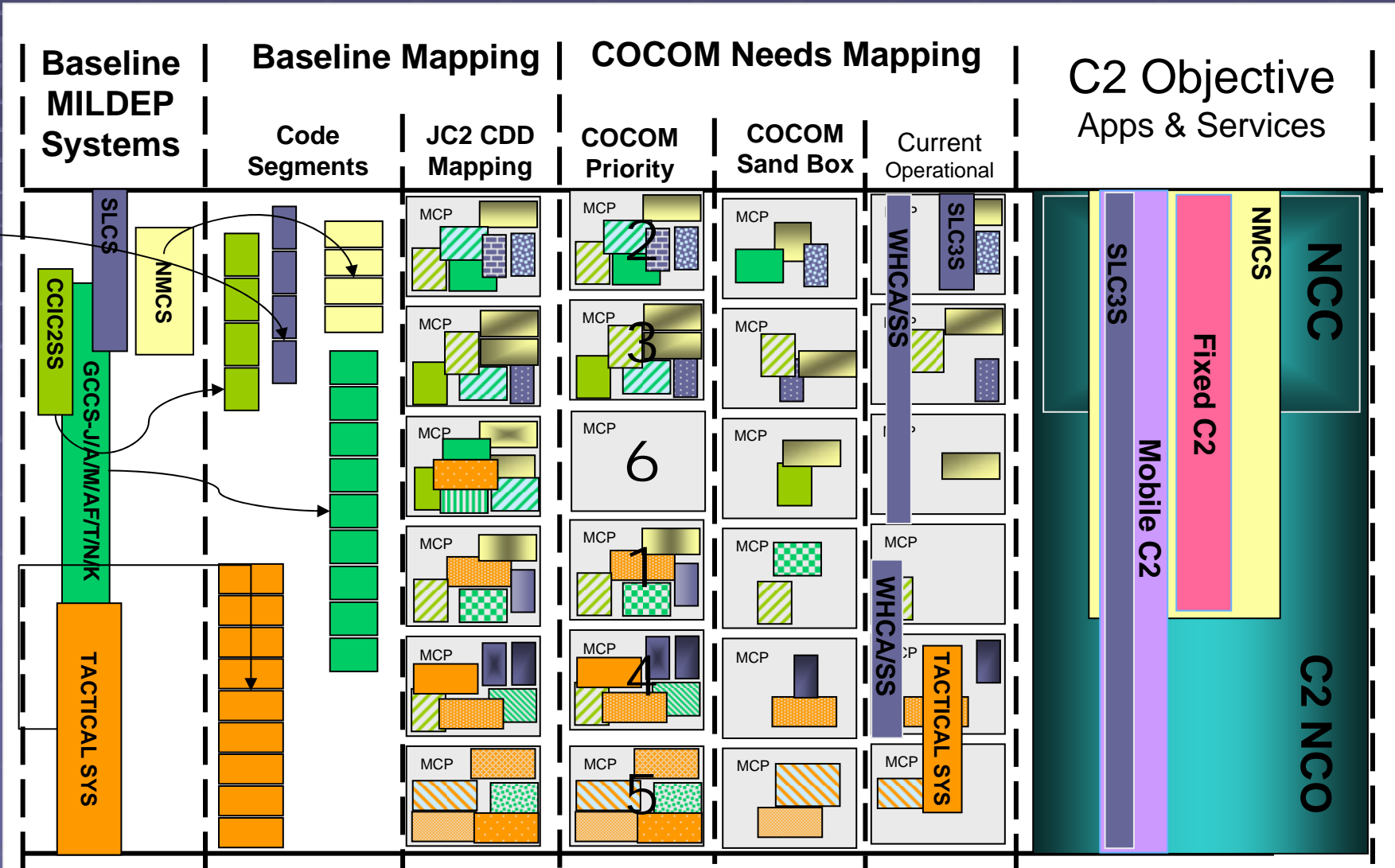
- **Standard Net-Centric C2 Center**
 - Operational
 - Sandbox (FDCE)

- **Standard C3I TTP Configuration**
 - WHMO
 - NMCS
 - 7 COCOMs
 - Service operational HQ
 - JTF (deployed)



C2 Applications and Services

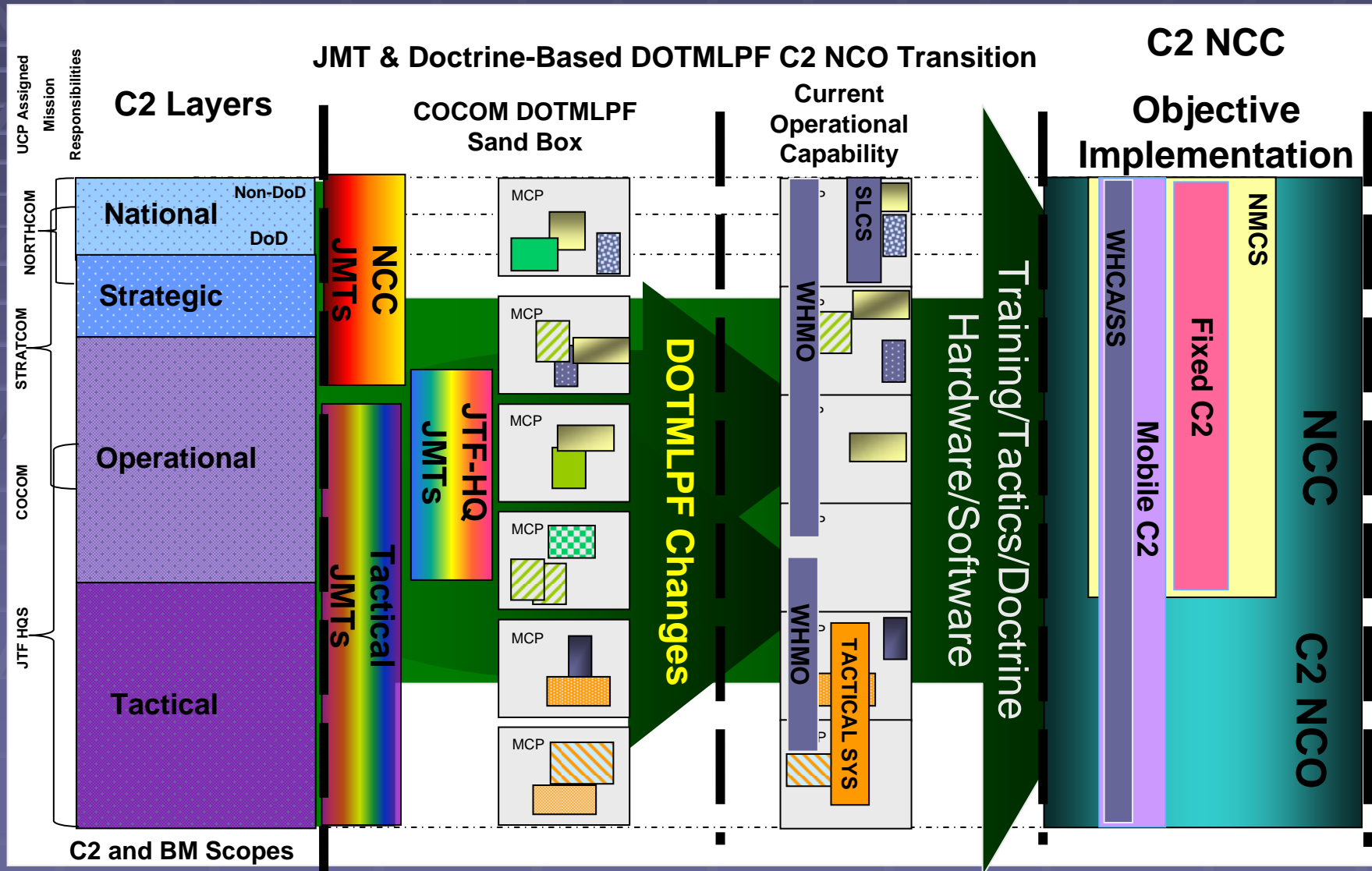
SOA Component Acquisition Strategy



C2 Applications and Services

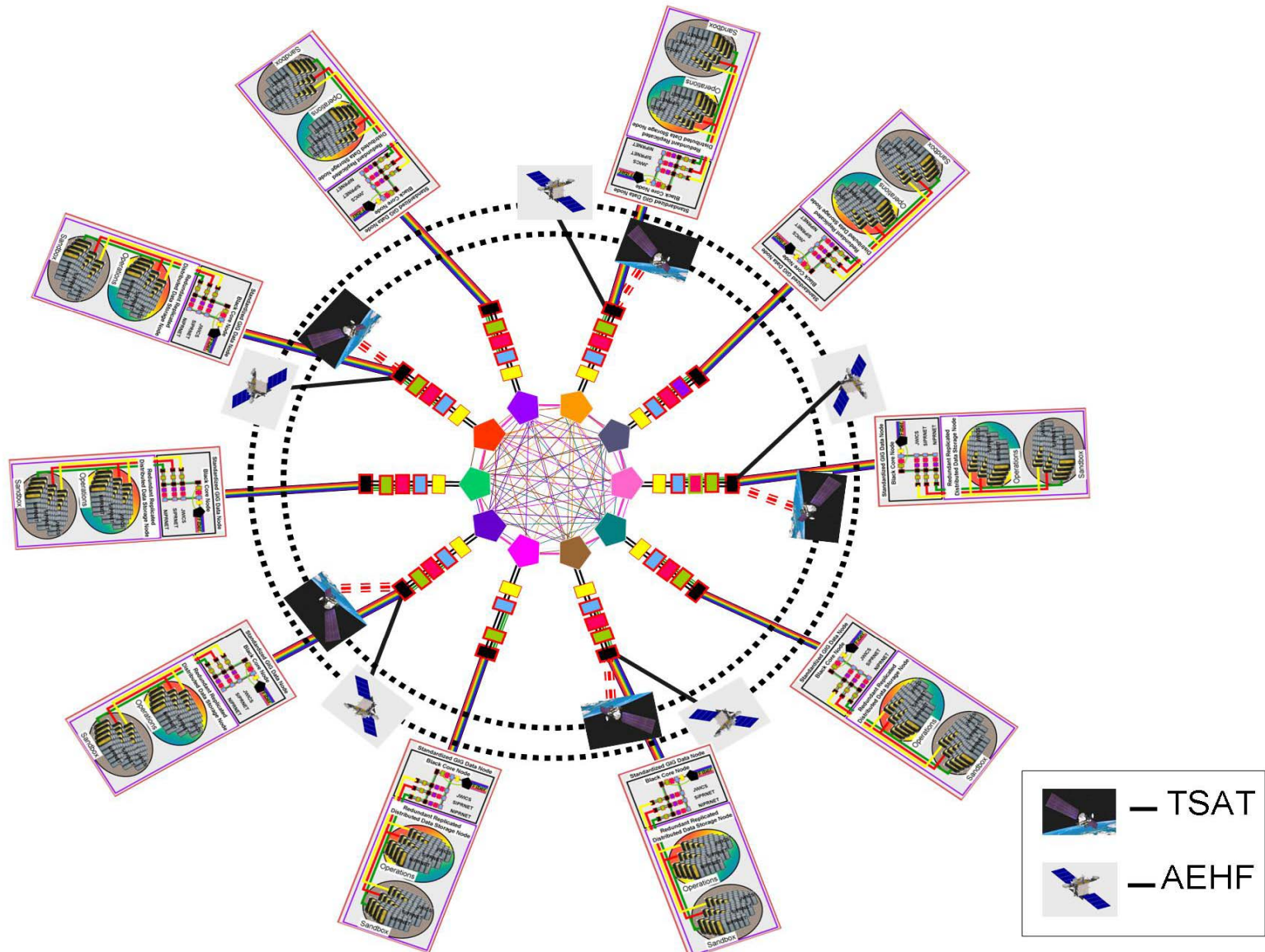
DOTMLPF Evolution Strategy

UNCLASSIFIED



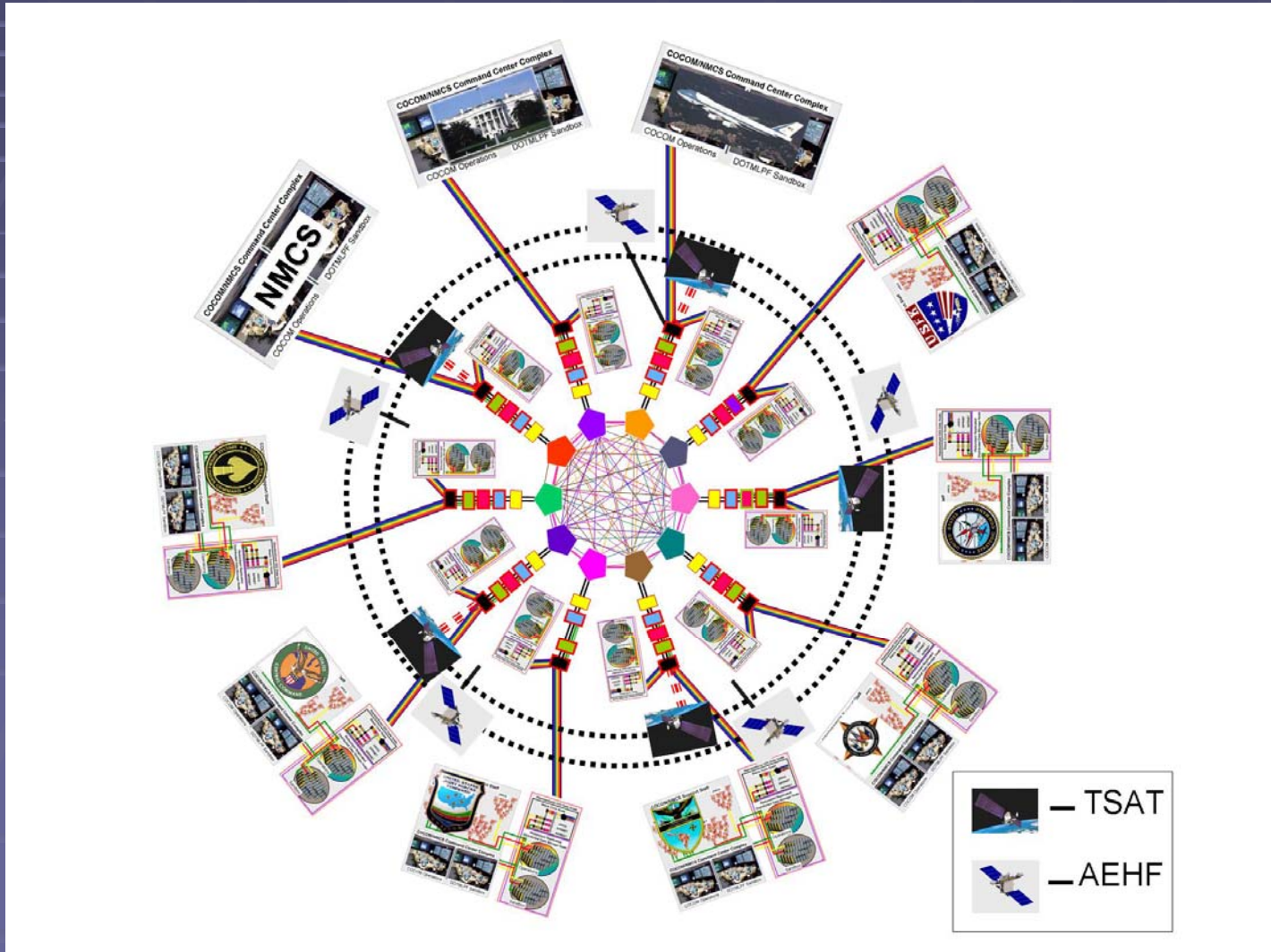
UNCLASSIFIED

GIG Redundant, Intelligently Distributed Data



COCOM and Global C2 Vision (OV-1)

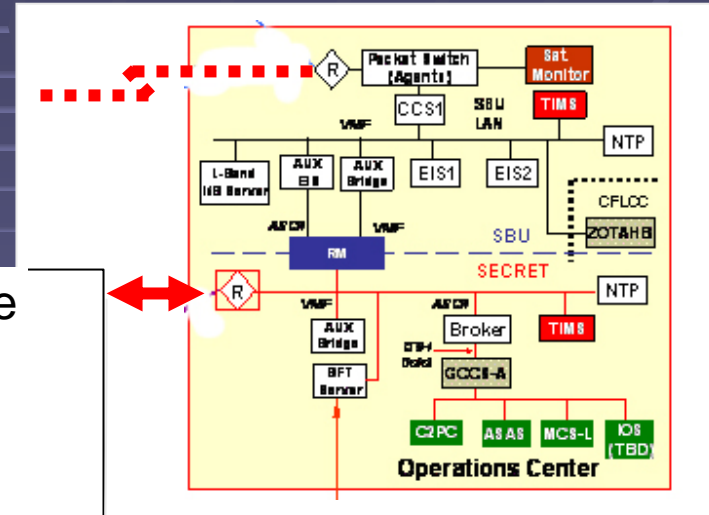
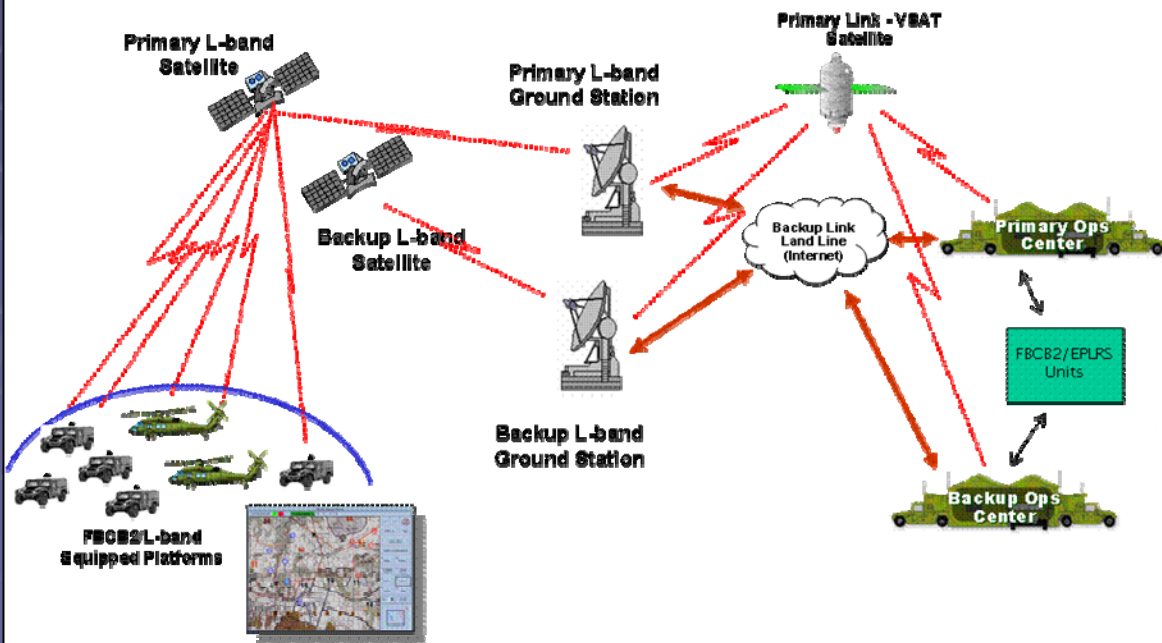
C2 In A Net-Centric GIG Environment



FBCB2-BFT

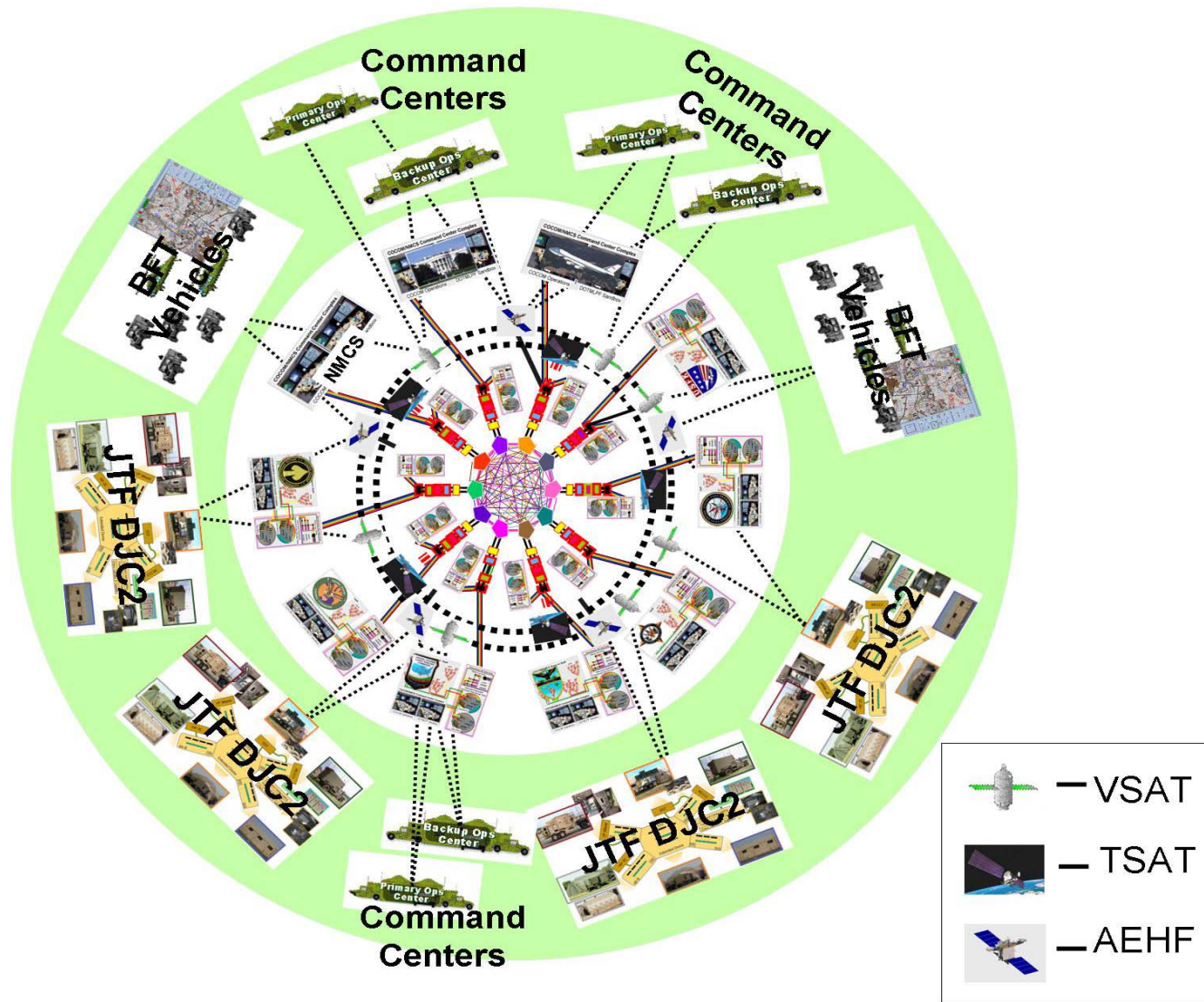
Net-Centric "Edge User" Support Today

BFT Direct Satellite Net-Centric C2 Architecture



Primary and Alternate Ops Center Configuration (Inside the C2 Tent)

Evolving Joint Task Force (JTF) C2 Vision (OV-1)



DoD C2 Strategy - Major Tenants

- **Continuous Operational Evolution To Net-Centric Warfare (NCW)**
 - Focus on DoD C2 as the major force multiplier of NCW
 - Enable accelerated evolution of DOTMLPF across the C2 Enterprise
 - Shared access to worldwide C2 information enables new levels of collaboration and sense making not previously possible.
 - Integrating C2 and Intelligence at all levels drives the needs for DoD infrastructure
 - Allow Service development of services/applications to support respective unique C2 needs within the enterprise DoD C2 Service Oriented Architecture (C2 SOA)
 - Enables National Command Capability (NCC) required by Presidential Directive
- **Ubiquitous User Connectivity To Distributed Authoritative Data**
 - Users at all levels:
 - Fixed C2 centers
 - Mobile C2 centers
 - Mobile users – POTUS to Soldier
 - GIG Network:
 - Secure, robust assured information flow across the network
 - Full spectrum security that enables aggressive counterintelligence.
- **Dynamic Command and Control Capability Growth**
 - Validated Requirements must be prioritized by COCOM's based upon current operational needs.
 - Dynamic configuration/reconfiguration and refresh of C2 and Communications infrastructure.
 - Integrated enterprise level security, Network Operations (NETOPS) and Crypto
- **Incremental Change Upon Near Term Implementation**
 - Rapid technology insertion
 - A near term implementation