



C4I Support Plan

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OASD/C3I

Program Analysis and Integration

June 13, 2001

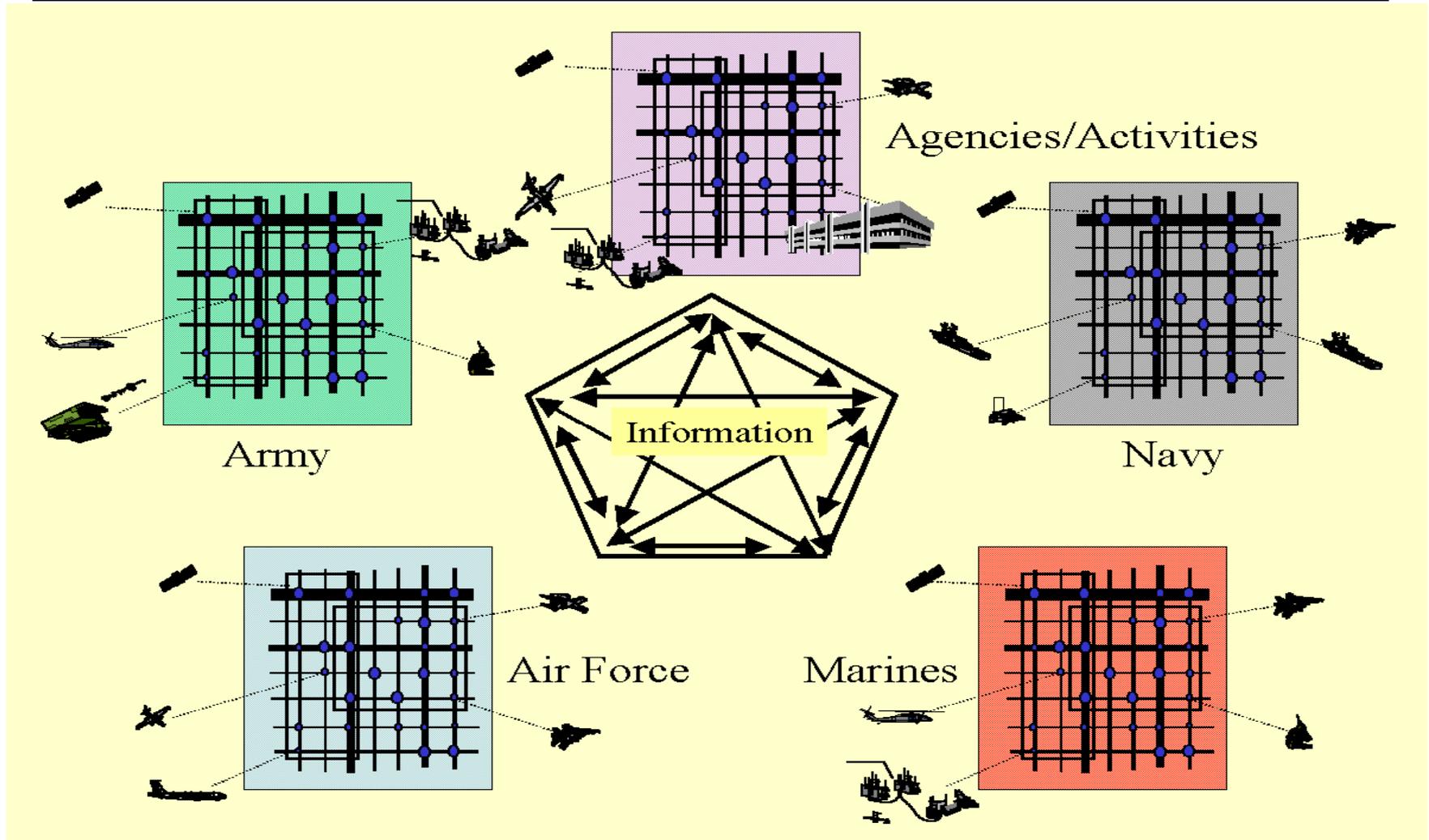


Briefing Overview

- **C4ISP Concept**
- **C4ISP Contents**
- **Suggested Approaches**
- **C4ISP Policy in DoD 5000 series**
- **JMAAT Demo**



The Inter-Service/Agency Interoperability Problem





Value of the C4ISP

Services / Program Offices:

- *Identifies C4I system support needs*
- *Describes systems dependencies*
- *Defines interface requirements*

Joint Staff:

- *Enables C4I supportability certification*
- *Information source for the JWCAs*

OSD:

- *Helps determine investment strategy*
- *Helps formulate DPG Language*
- *Enables oversight of Information Superiority requirements*

C4I Agencies / Offices:

- *Determines supportability needs*
- *Identifies shortfalls*
- *Facilitates interoperability & integration*

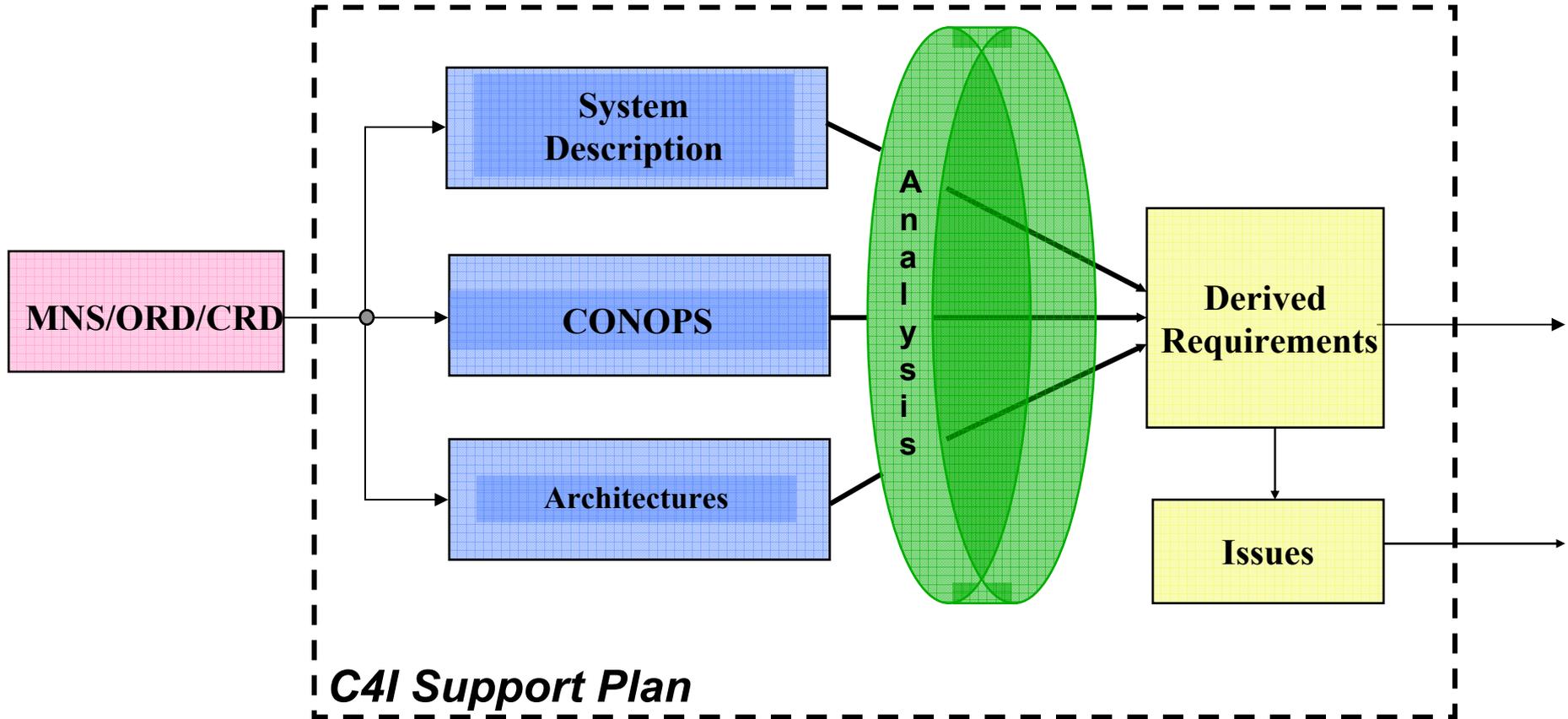


Key References

- **DOD 5000.1, DOD 5000.2, and 5000.2-R** (Part 6.4 and Appendix E) Mandatory Procedures for MDAPS a MAIS Acquisition Programs **04 Jan 2001, Jun 01**
- **DOD Acquisition Deskbook** C4I Support Plan Guidance and Format. **December, 1999**
- **C4ISR Architecture Framework** Ver. 2.0 **Under revision**
- **DOD 4630.5 &..8** “Interoperability and Supportability.” **Under revision**
- **CJCSI 3170.01A** Requirements Generation System. **August 10, 1999 Under Revision**
- **CJCSI 6212.01B** “Interoperability and Supportability of National Security systems and Information Technology Systems. **April 2000**
- **CJCSI 3312.01, DRAFT** “Joint Military Intelligence Requirements Certification Process”



The C4ISP Development Process





C4ISP Contents

Chapter 1: INTRODUCTION

- Provides an introduction and acquisition status

Chapter 2: SYSTEM DESCRIPTION

- Identifies system specific information

Chapter 3: OPERATIONAL EMPLOYMENT

- Identifies operational and architectural information

Chapter 4: DERIVED C4I SUPPORT REQUIREMENTS

- Provides analysis and analysis results leading to identification of C4I support requirements

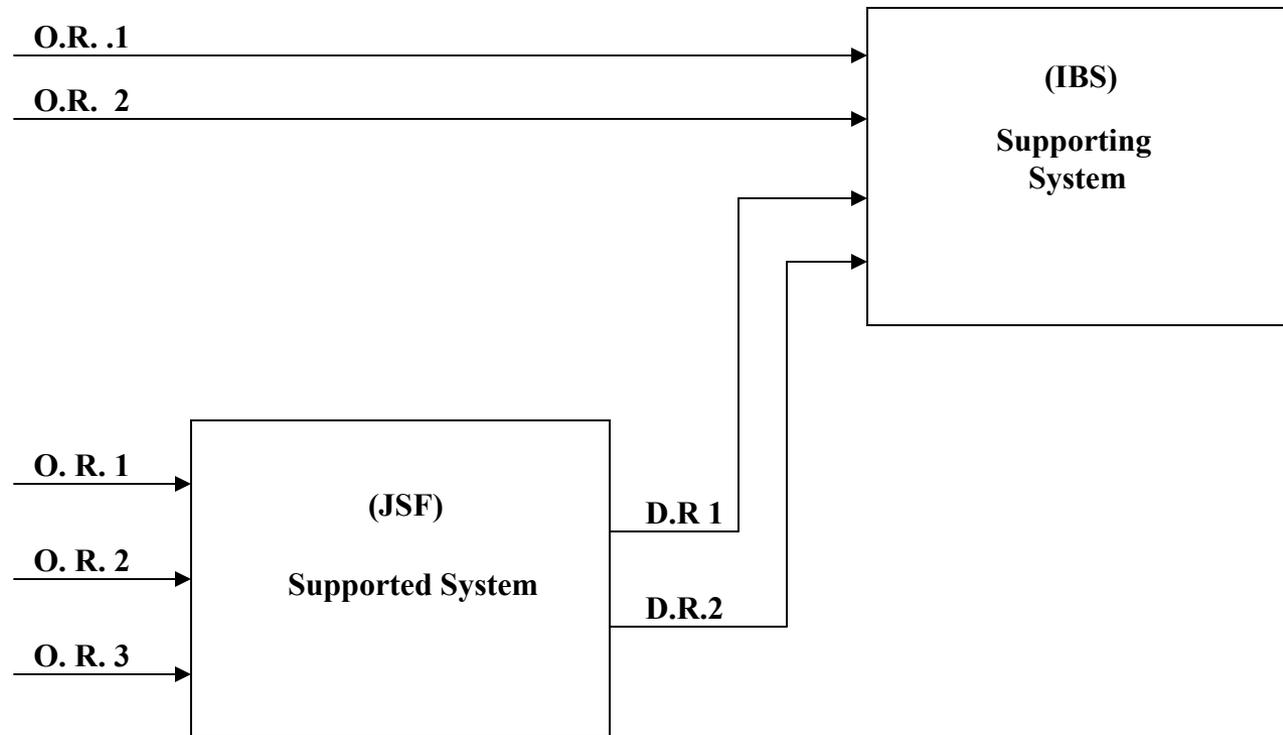
Chapter 5: POTENTIAL C4I SHORTFALLS & PROPOSED SOLUTIONS

- Identifies shortfalls in available or projected C4I support and interoperability

● **Note:** Supporting appendices provide amplifying data

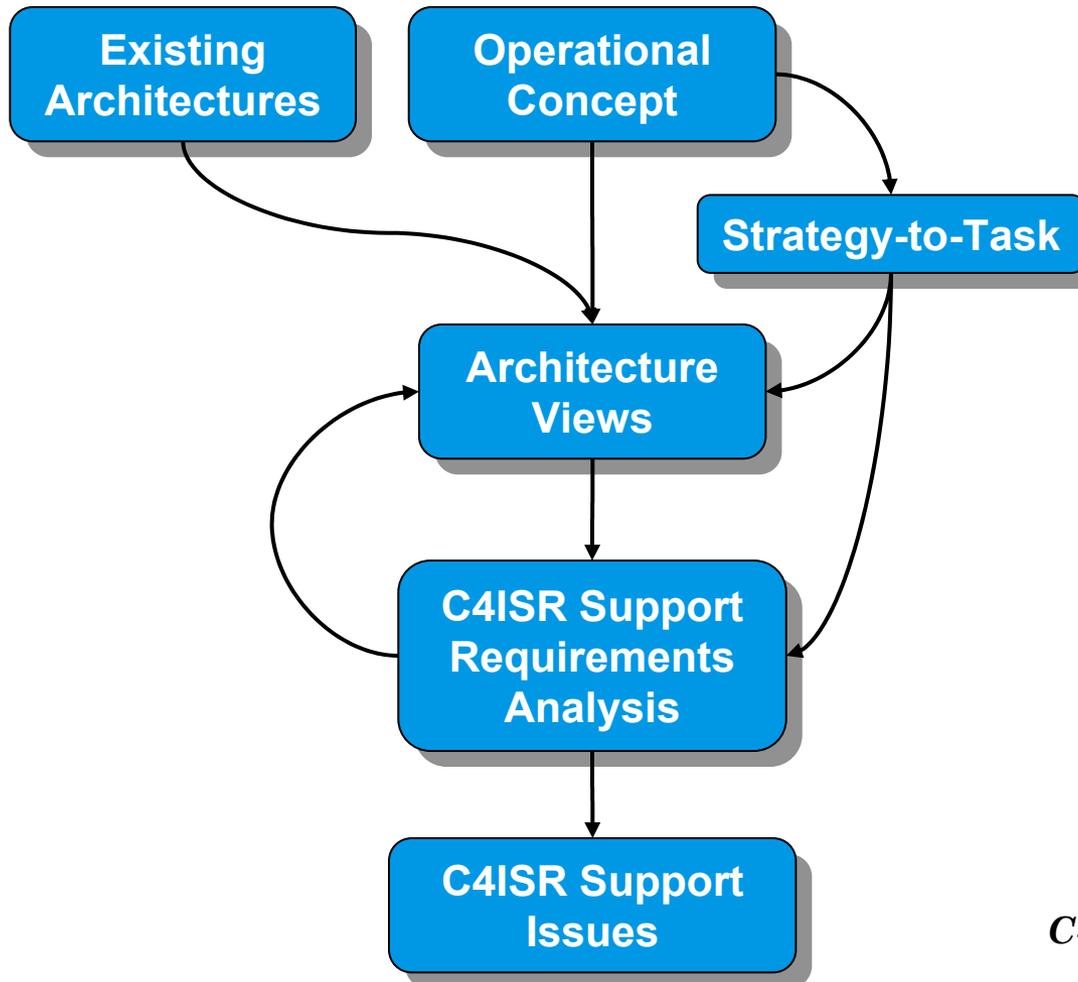


Derived Requirements





Strategy-To-Task Methodology

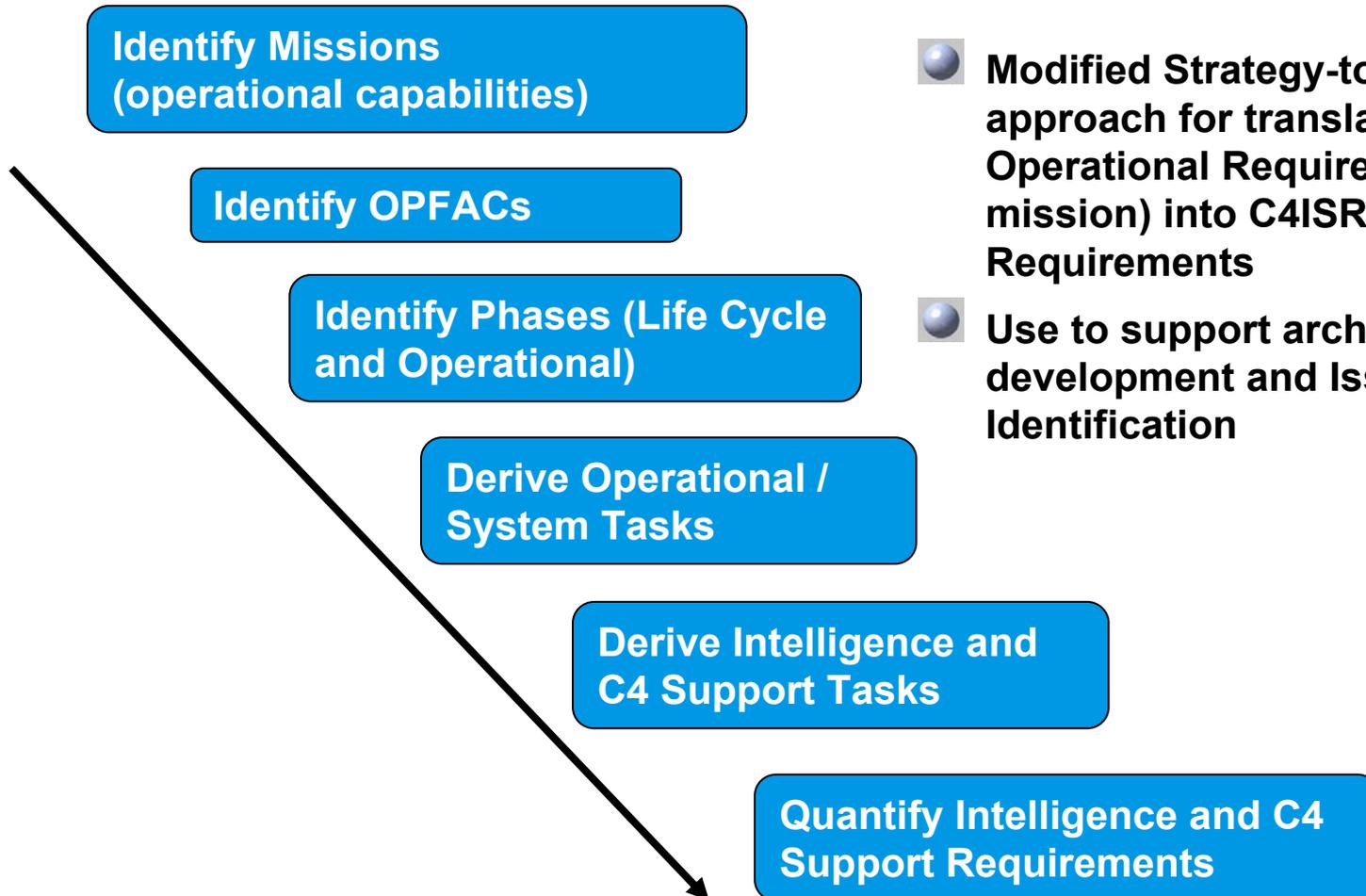


- Goal: ID and resolve C4ISR Interop. & Support Issues
- Plug into existing, valid architectures, if relevant
- Use Modified Strategy-to-Task method to identify C4ISR support requirements
- Use C4ISR Architecture Views to present interfaces and intelligence / information flow requirements
- Analyze sufficiency of architectures to provide required C4ISR support
- Modify architectures
- Identify unresolvable C4ISR support issues

C4ISP Analysis Processes



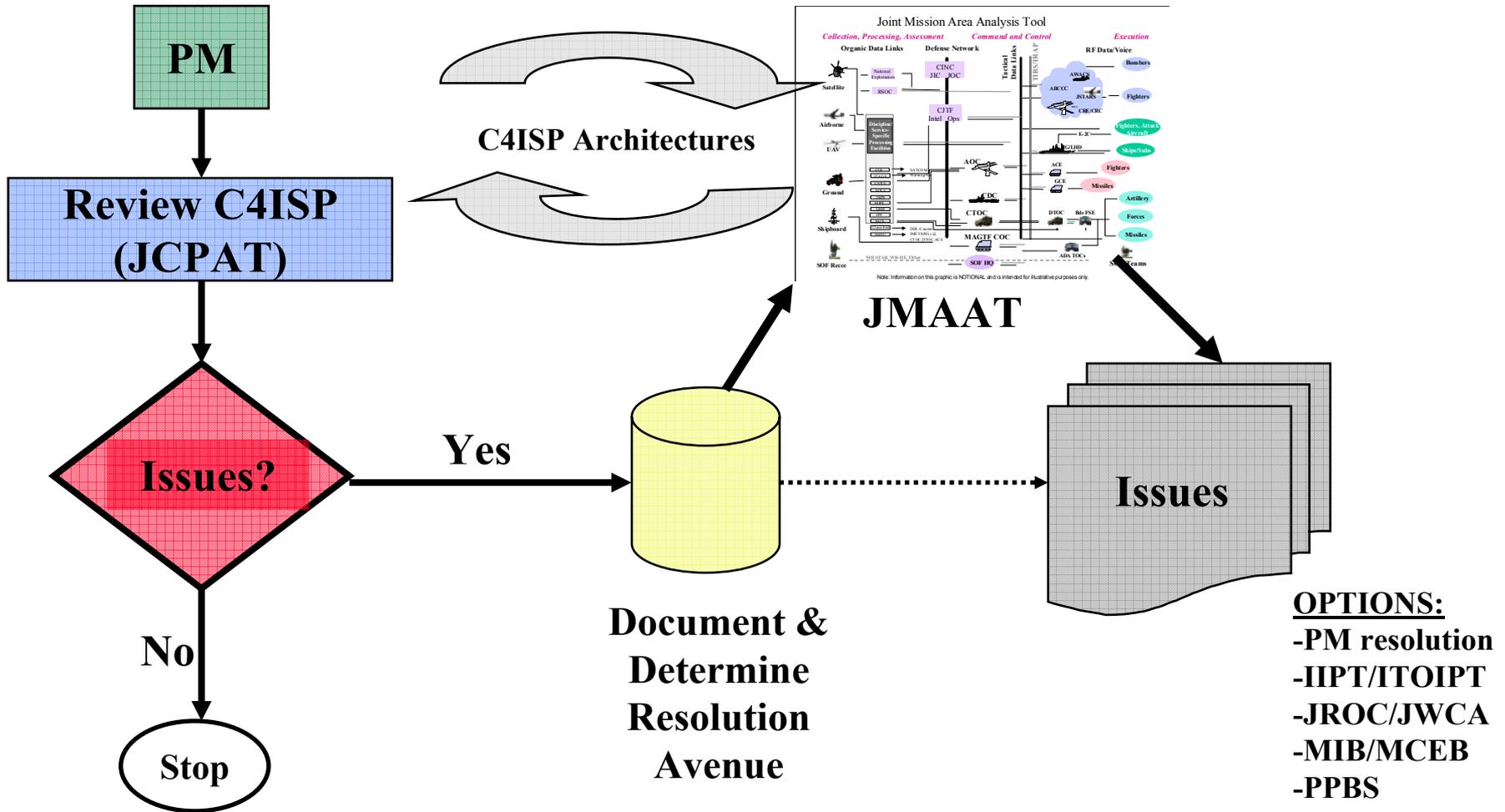
Strategy-To-Task Methodology (continued)



- **Modified Strategy-to-Task approach for translating Operational Requirements (by mission) into C4ISR Support Requirements**
- **Use to support architecture development and Issue Identification**



C4ISP Process





C4ISP Policy in DoDI 5000.2

The evaluation of IT/NSS interoperability and supportability for each acquisition program will be documented in the C4ISP and discussed in the acquisition strategy (para 4.6.2.1.3, 4.6.2.2.2)

For all acquisition programs, a C4ISP is required to support program initiation, Milestone B, & Milestone C. The C4ISP must be summarized in the acquisition strategy (enclosure 3, table 2)

C4ISP is required to support Milestones I, II, and III for all programs following the old acquisition model

Before making the Full Rate Production (FRP) decision, the MDA shall consider C4I supportability certification and interoperability certification (para 4.7.3.3.5)

C4I supportability certification by J-6 and J-2 based on the C4ISP (CJCSI 6212.01B and draft CJCSI 3312.01)

Interoperability certification testing by JITC (CJCSI 6212.01B, DoDD 4630.5, DoDI 4630.8)



Evolving From “C4I” to “IT/NSS” (40 USC 1401 and DoDD 5000.1)

Information Technology (IT)

Any equipment, or interconnected system or subsystem of equipment, that is **used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information.**

The term "IT" includes computers, ancillary equipment, software, firmware, and similar procedures, services (including support services), and related resources. **The term "IT" also includes National Security Systems.** It does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract.

National Security System (NSS)

Any telecommunications or information system operated by the U.S. Government, the function, operation, or use of which: (1) **Involves intelligence activities;** (2) **Involves cryptologic activities related to national security;** (3) **Involves command and control of military forces;** (4) **Involves equipment that is an integral part of a weapon or weapons system;** or (5) **Subject to the limitation below, is critical to the direct fulfillment of military or intelligence missions.** This does not include a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications).



Summarize the C4ISP in the Acquisition Strategy (DoD 5000.2-R)

Assess the potential **impact** of technical, schedule, cost, and funding critical path issues **related to interoperability, including critical path issues in other programs** that will exchange information with the delivered system

Critical path issues: Issues that could impact the PM's ability to execute the acquisition strategy.

Summarize the IT/NSS infrastructure and support considerations identified in the ORD and evaluated in the C4ISP. If infrastructure enhancements are required to support program execution, identify technical, schedule, and funding critical path issues for both the acquisition program and the IT/NSS infrastructure.

Describe support shortfalls and issues, and plans to resolve the issues, and provide additional supporting detail in the C4ISP.



General C4ISP Requirements (*DoD 5000.2-R Section 6.4*)

Tailor C4ISPs based on complexity, scale, mission criticality or other unique program aspects

MDA, with CIO advice, may waive C4ISP preparation only if the program has no interoperability KPP

Example: C-5 Reliability Enhancement and Re-Engining Program

Capstone C4ISPs encouraged to the maximum extent practical

Preferred in lieu of C4ISPs for individual acquisition programs

Address families of systems, mission areas, etc. Place individual acquisition programs in a broader, integrated context

Also, a tool to facilitate C4I support planning for less-than-major systems



Review of C4I Support Plans (1 of 3) *(DoD 5000.2-R Appendix E)*

Keep C4ISP current from program initiation to end of the acquisition process

Draft DoDI 4630.8 may require C4ISP to be kept current for the entire program life cycle

Formal reviews prior to appropriate decision points, or when CONOPs or IT/NSS support requirements change

Program initiation and formal milestones

Decision reviews, when appropriate

Each block of an evolutionary acquisition program



Review of C4I Support Plans (2 of 3) (DoD 5000.2-R Appendix E)

Components must manage review of C4ISPs

Components must establish a process to support C4ISP preparation, review, issue resolution, approval

Coordinate C4ISPs with all affected Components

Copy of all C4ISPs to OASD(C3I) after approval

Potential for identification of new issues, or designation as “special interest”

OASD(C3I) manages DoD-wide review of C4ISPs for high impact programs following internal staffing by Components

All ACAT I programs (ID, IC, IAM, IAC)

Designated “special interest” ACAT II, ACAT III, and other programs

Includes Capstone C4ISPs (e.g., Land Attack, IBCT), and pre-MDAP or pre-MAIS programs

Joint Staff, USJFCOM, Components can propose candidate programs

Potential candidates: Selected C4ISR infrastructure programs, PGMs, UAV-related programs, Interoperability Watch List programs, programs from other OSD, Joint Staff special interest lists



OASD(C3I) C4ISP Review Process (3 of 3) *(DoD 5000.2-R Appendix E)*

C4ISP review schedule tied to ORD review schedule

Review/validation of C4ISR-related operational requirements first

The C4ISP review process begins at least 6 months before the decision point

Stage 1 review takes about 8 weeks: Review, submit comments, consolidate and evaluate comments, feedback to Component

Update the C4ISP. Another Stage 1 review required?

Stage 2 review takes about 6 weeks: Same process, but quicker

OASD(C3I) guidance on remaining critical issues (if any), follow-on C4ISP update requirements.

Final update of the C4ISP. C4ISP approval and Stage 3 submission



C4ISP Guidance -- Next Steps

Short Term

Update C4ISP guidance in Defense Acquisition Deskbook

Target: Four months after DoD 5000.2-R publication

Longer Term

Joint Staff **update of CJCSI 3170.01A and CJCSI 6212.01B**

Component policies and procedures for C4ISP preparation, review, approval, and shortfall resolution

Processes to manage derived requirements

CJCSI 6250.01 (SATCOM Req'ts) is an example

Format and tools for **automated IER analysis**

Roles, needs of OASD(C3I), OUSD(AT&L), JS/J-6, USJFCOM, and others to be defined



Joint C4I Program Assessment Tool (JCPAT)

Electronic Document Distribution and Tracking

The screenshot shows a Netscape browser window titled "c4ispnav - Netscape". The address bar displays the URL "http://jcpat.ncr.disa.mil/jecoweb.nsf/c4ispnav?OpenNavigator". The main content area has a blue background and features the Department of Defense seal in the top left corner. The title of the page is "Command, Control, Communications, Computers and Intelligence Support Plan (C4ISP) Assessment Tool". Below the title, there is a section for the "Joint C4ISR Decision Support Center" with a logo that includes the letters "DSC" and an American flag. To the right of this section, there is a heading "The C4I Support Plan" followed by a paragraph of text: "DOD 5000.2R states that a C4I Support Plan (C4ISP) shall be prepared for all weapons systems and programs that interface with C4I systems. The C4ISP Assessment Tool facilitates electronic coordination of these plans in accordance with C4I Support Plan guidance in the DOD Acquisition Deskbook." On the left side of the page, there are several navigation links: "Program Manager", "ASD(C3I) Mgmt", "Assessors", "Roll-Up", "General Viewer" (with a "Under Development" tag), "Help Guides", "Document Repository", "Change Password", "JCPAT Main Page", "DOD Instruction 4630" (with a "Under Development" tag), and "Admin". At the bottom left, it says "Last updated: 02 August 1999". The browser's status bar at the bottom shows "Document: Done".



C4ISP Assessment Community

OSD

OASD(C3I)
OUSD(A&T)
DOT&E

JS

J2 (IRCO)
J6
J8

CINCs

CIPO's

CECOM
ESC
SPAWAR

Services

ARMY: DISC4
AF: SAF/AQ, AFCA, AFMC, AC2ISR
Agency, AFCIC, 497th
NAVY: DASN(C4I), N6, N2,
SPAWAR

Agencies

DISA, JITC, JSC
NSA
NIMA

Others

JTAMDO
BMDO

PM

Interfacing Program Offices



C4ISPs Received

T-AKE-1 Auxiliary Dry Cargo Carrier dtd 02/01
Surface Combatant Land Attack 01/01
Joint Stand Off Weapon (JSOW) Unitary 9/00
UH-60M, dtd 9/00
Gapfiller 8/00
Combat Delivery Aircraft (C-130 AMP) dtd 8/00
Reserve Component Automation System (RCAS) 7/00
Global Hawk 7/00
Advanced Amphibious Assault Vehicle (AAAV), dtd 6/00
Joint Direct Attack Munition (JDAM), dtd 6/00
F/A-18 (Strike Fighter), dtd 5/00
STARS Common Ground Station (CGS) 5/00
DLA's Business Systems Modernization(BSM) 4/00
Defense Joint Accounting System (DJAS) 3/00
SLAM-ER 3/00
Def Mil Human Resources System(DIMHRS) 2/00
RAH-66 Comanche Helicopter, 2/00
Force XXI Battle Command Brigade & Below (FBCB2), dtd 2/00
V-22 Osprey, dtd 1/00
JSTARS Radar Technology Insertion Program(RTIP), dtd 12/99

Mobile User Objective System (MUOS), dtd 12/99
F-22 Advanced Tactical Fighter , dtd 11/99
Multifunctional Information Distribution System Low-Volume Terminal (MIDS-LVT), dtd 12/99
Multiple Launch Rocket System (MLRS) (10/99)
Theater Medical Information Program (TMIP) dtd 10/99
Future Carriers (CVNX), dtd 9/99
Theater High Altitude Area Defense (THAAD), dtd 7/99
Battlefield Combat ID System (BCIS) dtd 5/99
Joint Strike Fighter (JSF), dtd 3/99
Joint Stand Off Weapon(JSOW)-Unitary, dtd 3/99
Navy Theater Wide BMD dtd 2/99
Hard & Deeply Buried Target Defeat dtd 1/99
Advanced EHF MILSATCOM dtd 1/99
Army Tactical Missile System-BAT dtd 10/98
Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T), dtd 10/98
Maneuver Control System (MCS), dtd 8/98
Joint Air to Surface Standoff Missile (JASSM), dtd 8/98
Joint Precision Approach and Landing System (JPALS), dtd 3/98
Patriot System, dtd 5/97
Theater Missile Defense (TMD), 7/96

Plans received from 38 Offices to date



C4ISP Points of Contact

OASD(C3I) C4I Support Plan Team

Mr. Bruce Lepisto (Air)	(703) 607- 0681
Mr. Carl Little (Prec. Munitions)	(703) 607- 0649
Mr. Bill Ortengren (Info Systems)	(703) 607- 0648
CDR Roger Thorstenson (Maritime, TAMD, NMD)	(703) 607- 0702
Mr. Paul Szabados (Land & Space)	(703) 607- 0703
Mr. Keith Dean (Model & Sim, C4ISP Process)	(703) 607- 0596
Mr. Bob Tarcza (Assessment)	(703) 607- 0631

Web Site

NIPRNET

SIPRNET

<i>DSC's C4I Support Plan</i>	http://www.dsc.osd.mil	147.254.104.12
<i>DISA's JCPAT</i>	http://jcpat.ncr.disa.mil	jcpat.ncr.disa.smil.mil
<i>C3I's JMAAT</i>		147.254.104.12/pai/index.htm



JFCOM JI&I Points of Contact CONOPS Development

Dave “Rocco” Ersek/McLean, VA

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Email: david.ersek@saic.com

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Phone: 757-836-0019

E-mail: ruck@jfc.com

Wayne Richards/Norfolk, VA

Phone: 757-836-5113

Kel Brown/McLean, VA

E-mail: kelvin.r.brown@saic.com

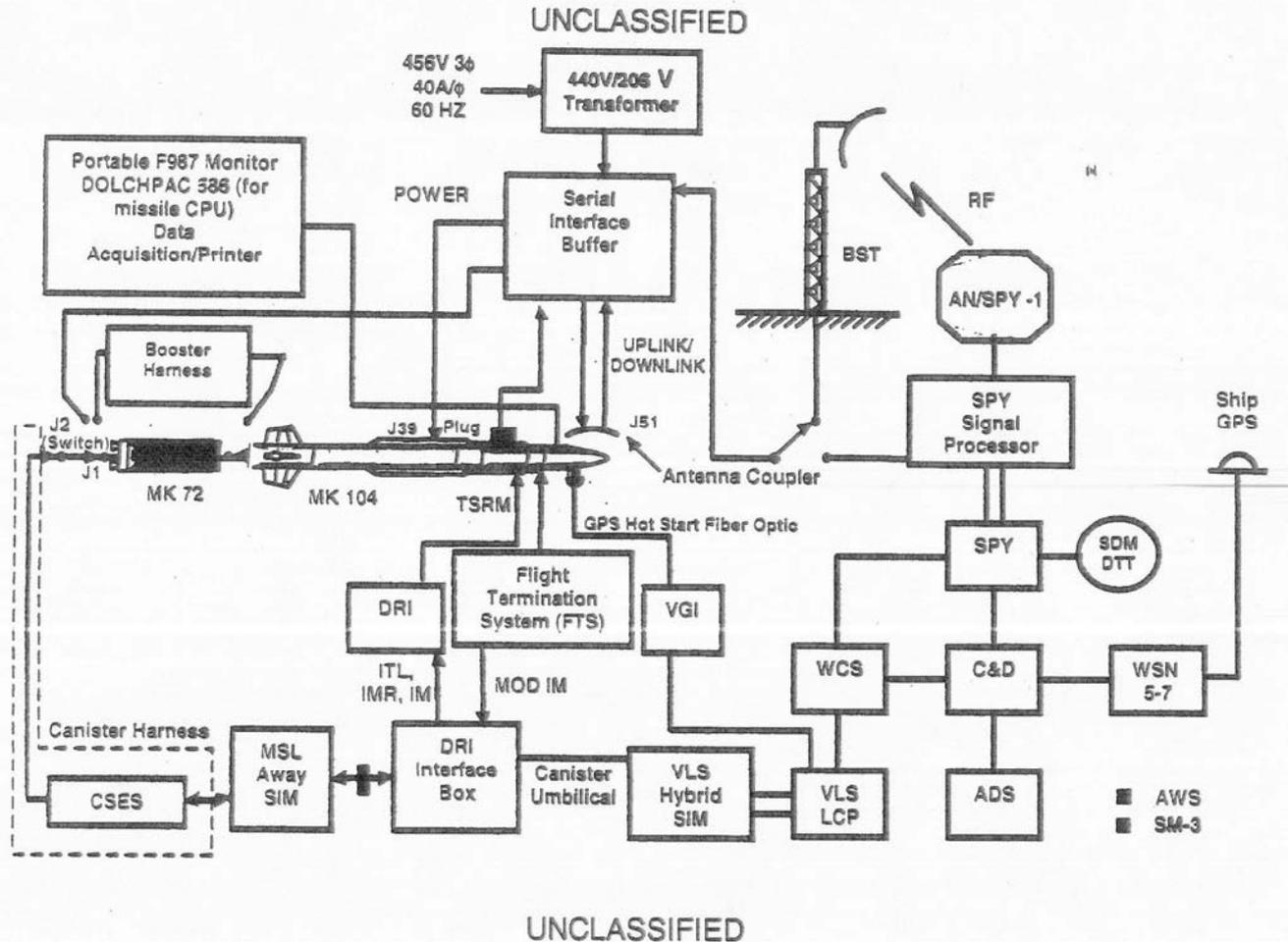


Backup



System Block Diagram

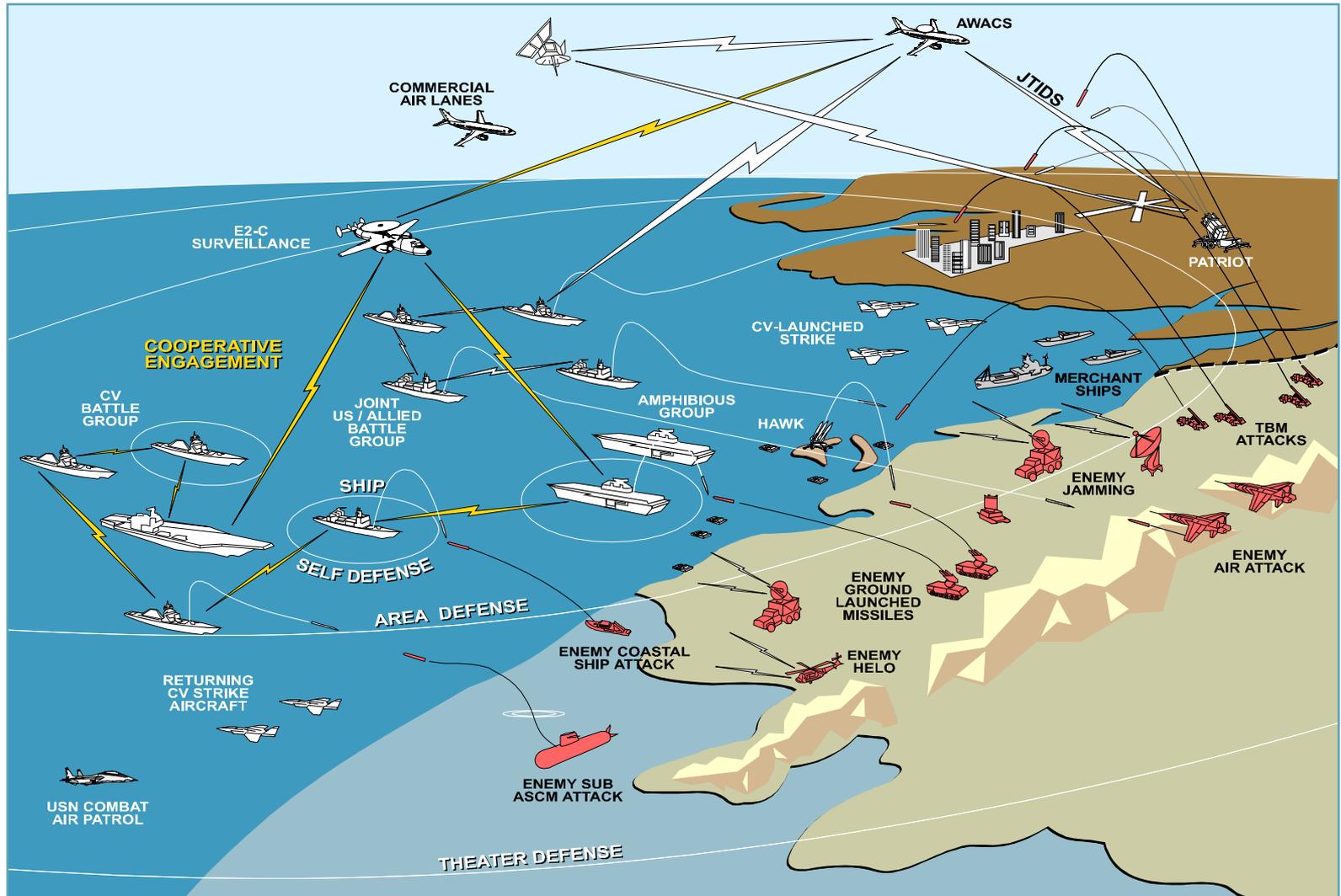
Figure D-1. (U) CSEDS Facility Functional Representation





OV-1: 2003 Strike Mission

(Notional For instructional purposes)





OV-2: 2003 Strike Mission

Node Connectivity Diagram

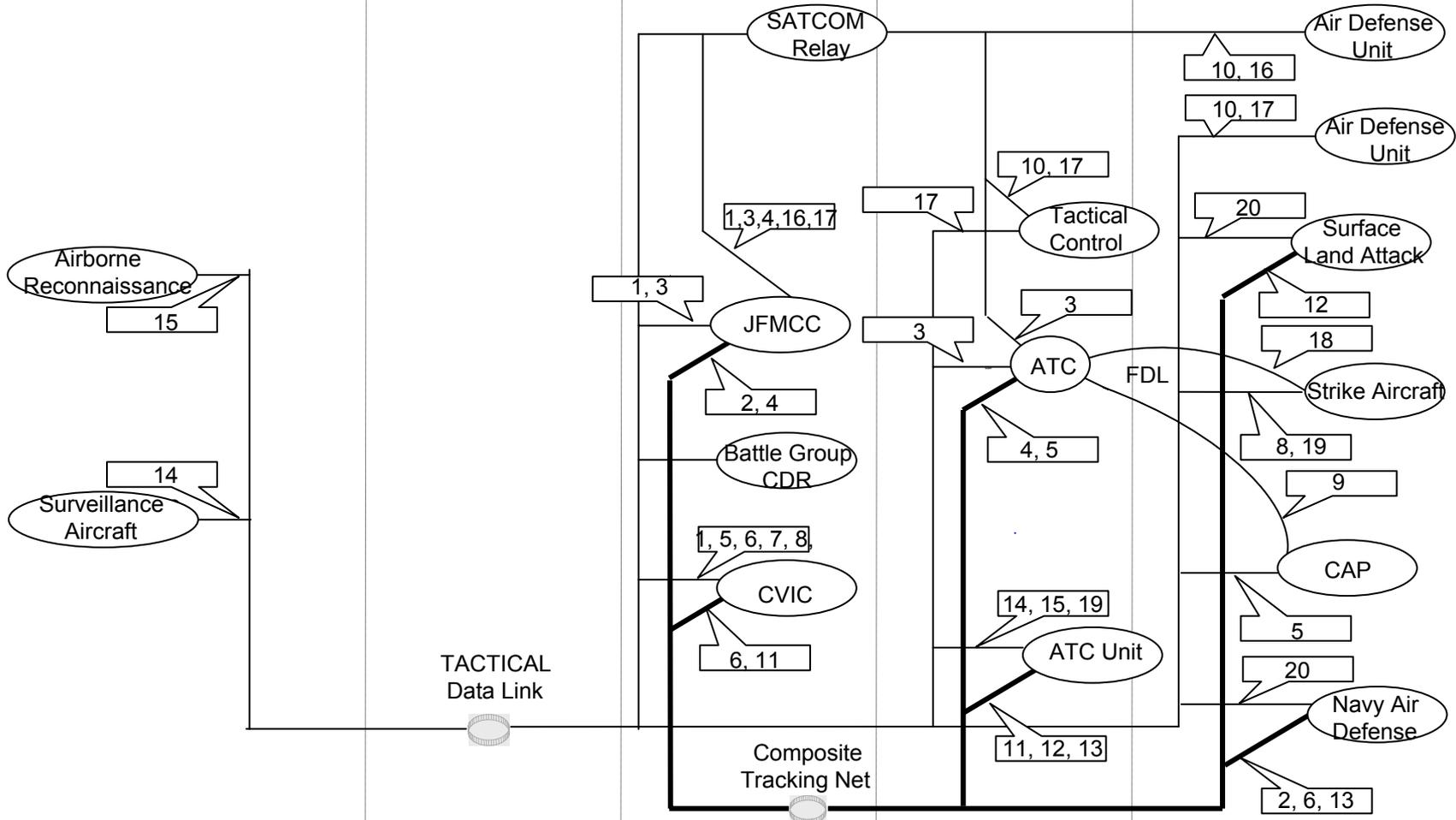
Collection

Processing & Analysis

Battle Management

Combat Direction

Execution



Note: Notional architecture for instructional purposes



OV-3: Strike Mission

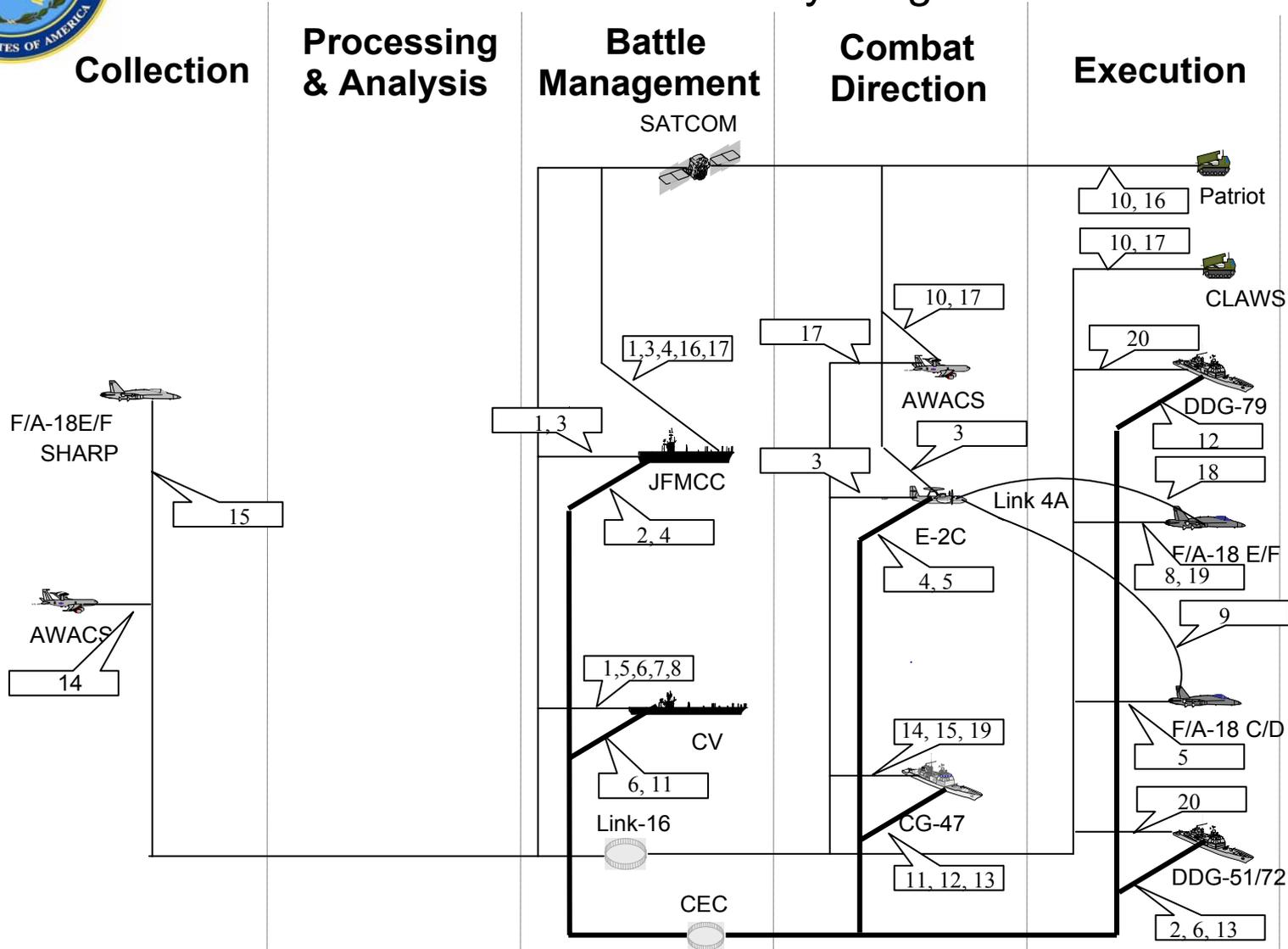
(Fictitious Data)

IER No.	Rationale/	Event/Action	Info Char	Sender	Receiver	Crit	Format	TimeInss	Class
1	TI 5.4.6	Target ID	Data	JFMCC	CVIC	Yes	J Series	30 sec	Sec
2	TI 1.1	Track Init.	Sensor	Nav Air De	JFMCC	Yes	CEC data	1 sec	Conf
3	TE 3.4.5	Engage Order	Data	JFMCC	ATC	Yes	J Series	15 sec	Sec
4	TI 1.3	Track Update	Sensor	ATC	JFMCC	Yes	CEC data	7ms	Conf
5	TE 3.4.5	Engage Order	Data	CVIC	CAP	Yes	J Series	10ms	Conf
6	TL 1.5	Target Loc	Sensor	Nav Air De	CVIC	Yes	CEC data	4 sec	Conf
7	TA 5.2	Target Acq	Data	Air Defens	CVIC	Yes	J Series	2 min	Sec
8	TI 6.8.5.7	Target Killed	Data	Strike airc	CVIC	Yes	J Series	3 min	Conf
9	PR 2.6	CAP Posit	Data	ATC	CVIC	Yes	J Series	35 sec	Sec
10	TL 1.5	Target Loc	Data	Air Defens	Tactical Co	Yes	J Series	4 Sec	Conf
11	TL 1.5	Target Loc	Sensor	ATC Unit	CVIC	Yes	J Series	2 sec	Conf
12	TI 5.4.6	Target ID	Sensor	ATC Unit	Surface La	Yes	CEC data	1 sec	Conf
13	PI 4.6	Posit Info	Sensor	Nav Air De	ATC Unit	Yes	CEC data	500 ms	Sec
14	TO 7.9.4.6	Cse Orders	Data	ATC unit	Surveil Ac	Yes	J Series	2 min	Conf
15	TO 7.9.4.6	Cse Orders	Data	ATC unit	Airborne R	Yes	J Series	2 min	Conf
16	TL 1.5	Target Loc	Data	ADA unit	JFMCC	Yes	J Series	4 min	Conf
17	TL 1.5	Target Loc	Data	ADA unit (JFMCC	Yes	J Series	4 min	Conf
18	TO 7.9.4.6	Cse Orders	Data	ATC	Strike Arcr	Yes	FDL	30 sec	Conf
19	TI 5.4.6	Target ID	Data	Strike airc	ATC Unit	Yes	J Series	30 sec	Conf
20	TI 5.4.6	Target ID	Data	Surface L	Navy Air D	Yes	J Series	30 sec	Conf



SV-1: 2003 Strike Mission

Node Connectivity Diagram



Note: Notional architecture for instructional purposes



SV-6: 2003 Strike Mission

(Fictitious Data)

IER No.	Sender	Receiver	Content	Media	Info Char	Format	Security	Freq	Timeliness	Thru put
1	JFMCC	CVIC	Target ID	JTIDS/SAT	Data	J 3.90	KG V-8	N/A	30 sec	N/A
2	DDG-51	JFMCC	Track Init.	DDS	Sensor	CEC data	KY-?	N/A	1 sec	N/A
3	JFMCC	E-2C	Engage Order	JTIDS/SAT	Data	J 13.85	KG V-8	N/A	15 sec	N/A
4	E-2C	JFMCC	Track Update	DDS	Sensor	CEC data	KY-?	N/A	7ms	N/A
5	CVIC	F/A-18	Engage Order	JTIDS	Data	J 13.85	KG V-8	N/A	10ms	N/A
6	DDG-51	CVIC	Target Loc	DDS	Sensor	CEC data	KY-?	N/A	4 sec	N/A
7	Patriot	CVIC	Target Acq	JTIDS	Data	J 4.56	KG V-8	N/A	2 m in	N/A
8	F/A-18CD	CVIC	Target Kille d	JTIDS	Data	J 8.76	KG V-8	N/A	3 m in	N/A
9	E-2C	CVIC	CAP Posit	JTIDS	Data	J 10.74	KG V-8	N/A	35 sec	N/A
10	Patriot	AWACS	Target Loc	JTIDS/SAT	Data	J 12.101	KG V-8	N/A	4 Sec	N/A
11	CG-47	CVIC	Target Loc	DDS	Sensor	J 12.101	KY-?	N/A	2 sec	N/A
12	CG-47	DDG-81	Target ID	DDS	Sensor	CEC data	KY-?	N/A	1 sec	N/A
13	DDG-51	CG-47	Posit Info	DDS	Sensor	CEC data	KY-?	N/A	500 ms	N/A
14	CG-47	AWACS	Cse Orders	JTIDS	Data	J 7.99	KG V-8	N/A	2 m in	N/A
15	CG-47	SHARPS	Cse Orders	JTIDS	Data	J 7.99	KG V-8	N/A	2 m in	N/A
16	Patriot	JFMCC	Target Loc	JTIDS/SAT	Data	J 12.101	KG V-8	N/A	4 m in	N/A
17	Hawk	JFMCC	Target Loc	JTIDS/SAT	Data	J 12.101	KG V-8	N/A	4 m in	N/A
18	E-2C	F/A-18EF	Cse Orders	JTIDS	Data	FDL	KG V-8	N/A	30 sec	N/A
19	F/A-18EF	CG-47	Target ID	JTIDS	Data	J 3.90	KG V-8	N/A	30 sec	N/A
20	DDG-81	DDG-51	Target ID	JTIDS	Data	J 3.90	KG V-8	N/A	30 sec	N/A



C4ISP Contents (Continued)

TV-1

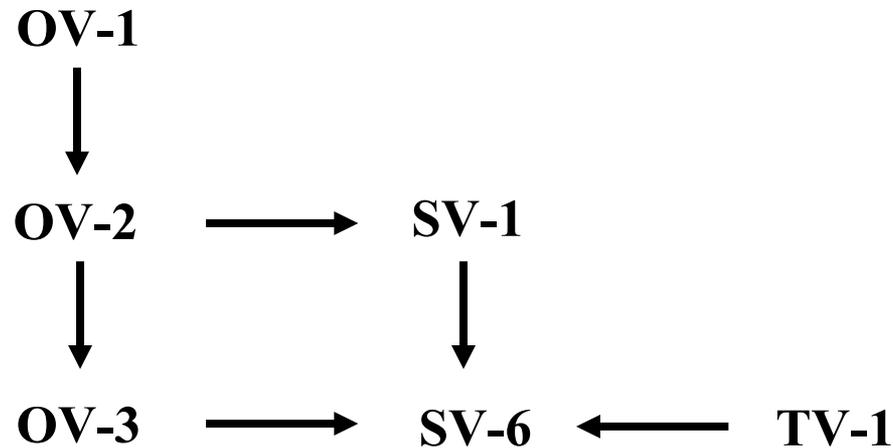
IER	Service Area	Service	Standard
	Operating System	Kernel	FIPS Pub 151-1 (POSIX.1)
		Shell and Utilities	IEEE P1003.2
	Software Engineering Services	Programming Languages	FIPS Pub 119 (ADA)
	User Interface	Client Server Operations	FIPS Pub 158 (X-Window System)
		Object Definition and Management	DoD Human Computer Interface Style Guide
		Window Management	FIPS Pub 158 (X-Window System)
		Dialogue Support	Project Standard
	Data Management	Data Management	FIPS Pub 127-2 (SQL)
	Data Interchange	Data Interchange	FIPS Pub 152 (SGML)
		Electronic Data Interchange	FIPS Pub 161 (EDI)
	Graphics	Graphics	FIPS Pub 153 (PHIGS)
	• • •		



C4ISP Contents (Continued)

Chapter 3: OPERATIONAL EMPLOYMENT Continued

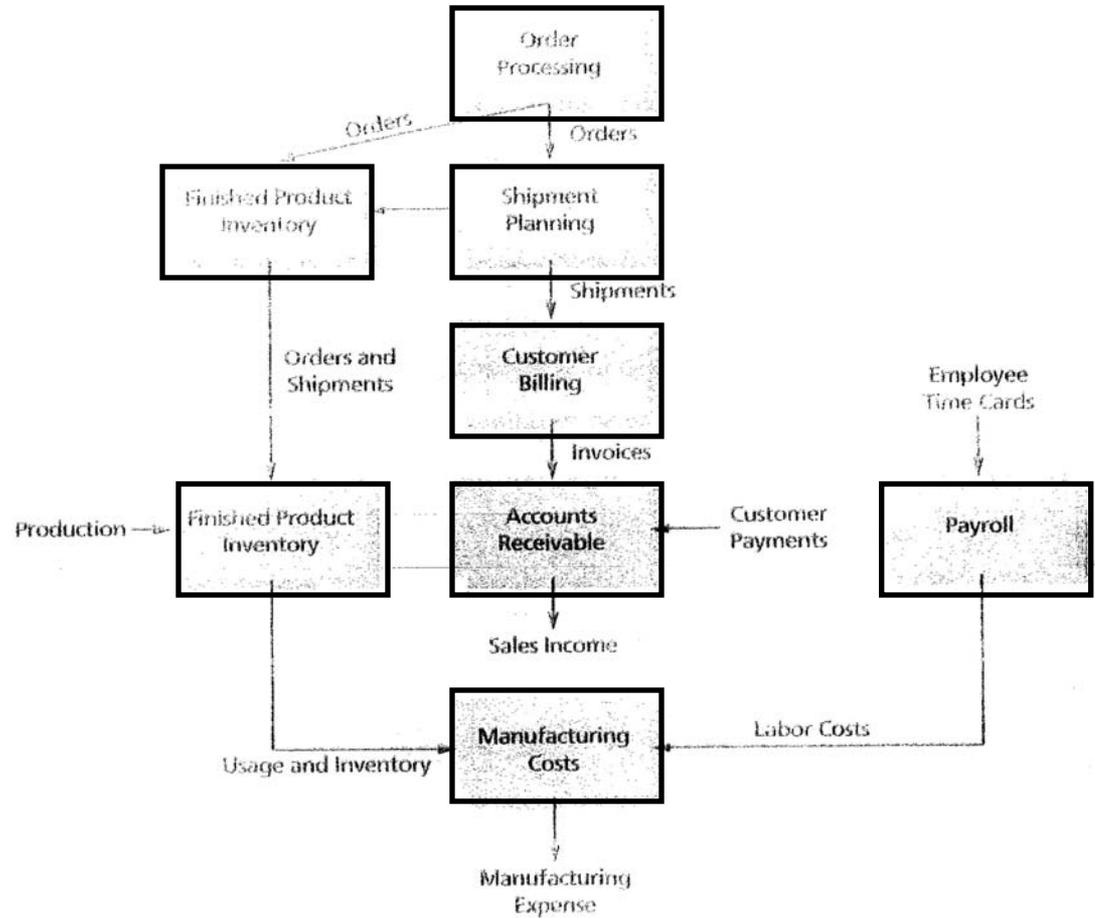
Relationship of the Mandatory Architecture Views:





Optional Views

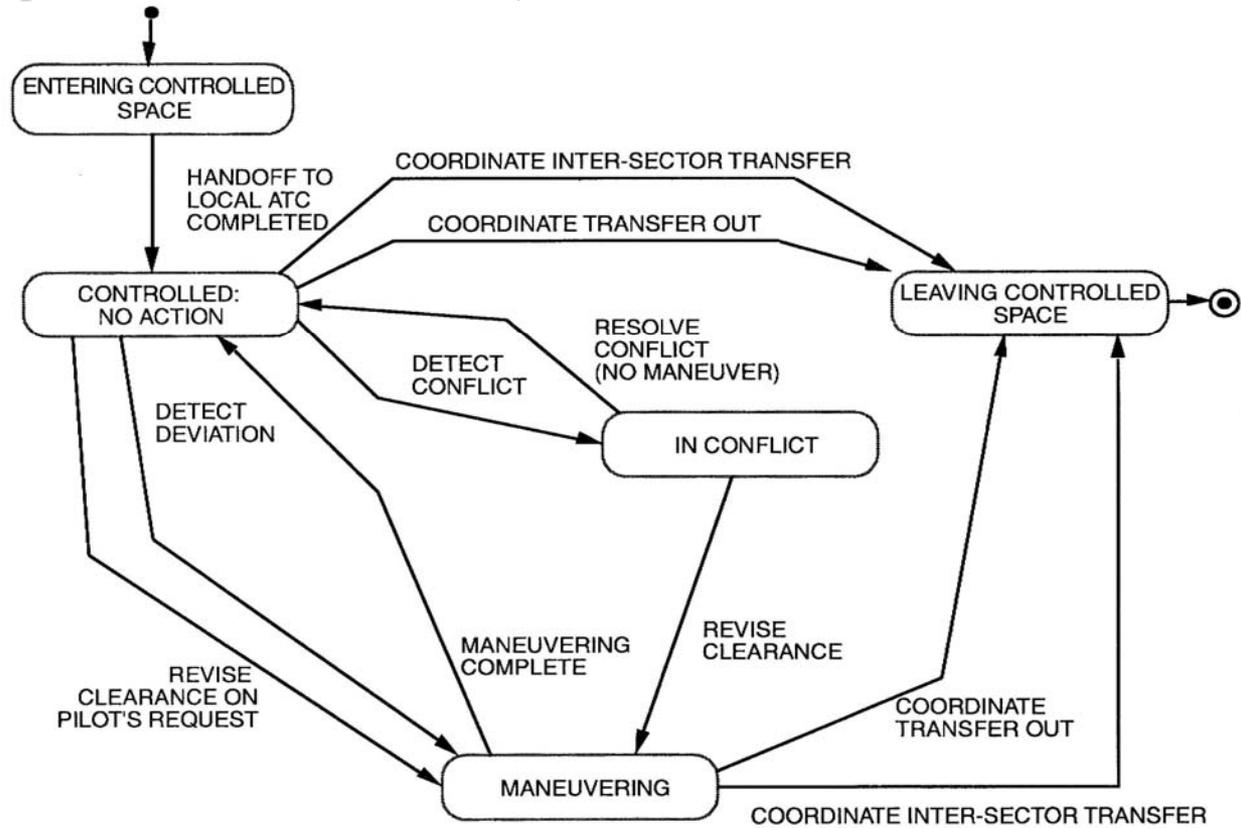
OV-2 (Operational Node Connectivity)





Optional Views(Continued)

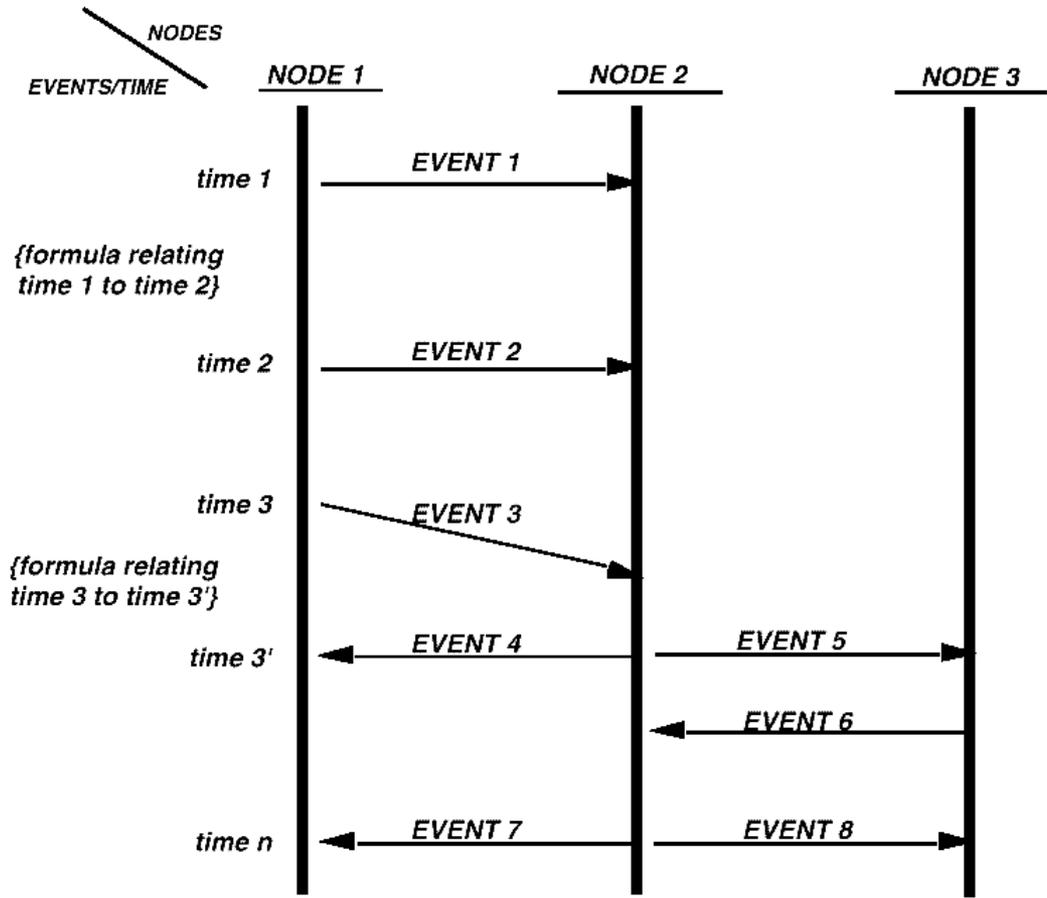
OV-6B (Operational State Transition)





Optional Views (Continued)

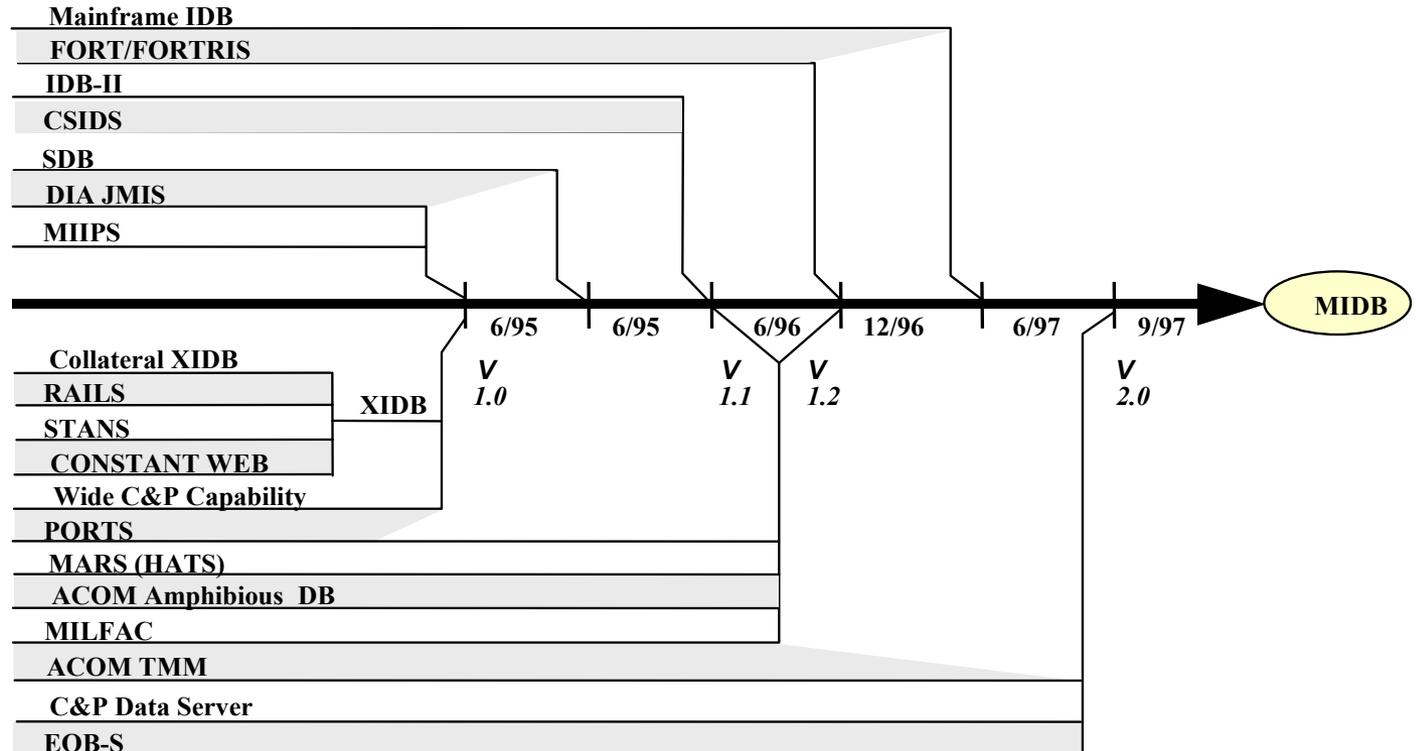
OV-6C (Operational Event Trace)





Optional Views (Continued)

SV-8

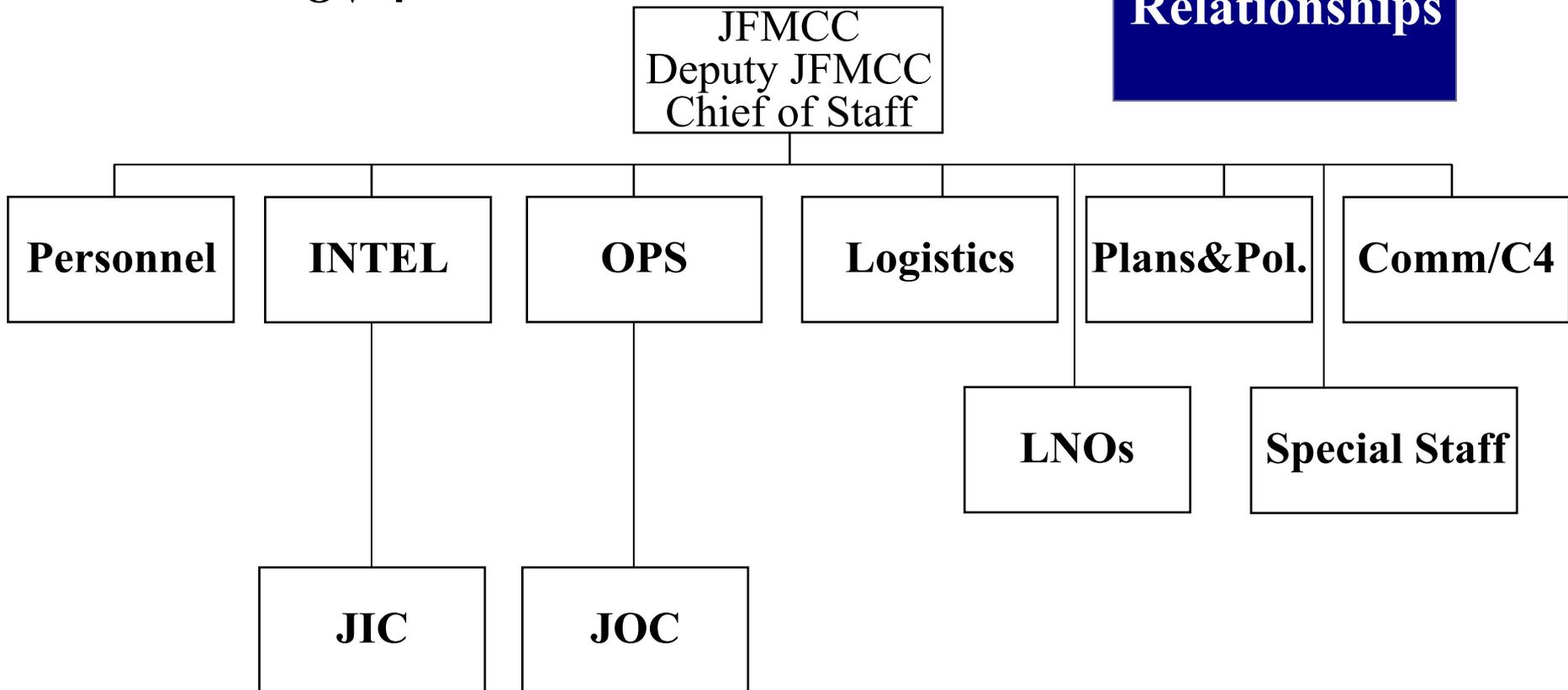




Optional Views (continued)

OV-4

Command Relationships





Optional Views (continued)

Functional Breakdown

OV-5

Recover Personnel

Sea

Air

Land

Generate Aircraft

Intel

Life Support

Weather

Rescue Escort

Refueling

C4I

Mission Planning

Suppression of Enemy Air Defenses

Personnel Recovery

Rescue CAP



C4ISP Contents (Continued)

Chapter 4: DERIVED C4I SUPPORT REQUIREMENTS

Phase: Design and Development

Mission - N/A

System 1 - collaborative engineering environment

System 2 - intelligence collection platform

Phase: Operations

Mission - Land Attack

System 1 - satellite comm system

specific need 1

specific need 2

System 2 - LOS comm system

specific need 1



OPERATIONAL CONCEPT MATRIX

Purpose _____

Major mission areas _____ System type _____

	Issues	High level capability/ requirement	Conditions of Success	Attributes	Thresh	Obj	Cost of Failure	Risk	JMA #	Operation
WHAT										
WHO										
WHEN										
WHERE										
HOW										



JOINT MISSION AREAS

- JMA 1 - Deployment Redeployment*
- JMA 2 - Movement and Maneuver*
- JMA 3 - Employ Fires*
- JMA 4 - Strategic Deterrence*
- JMA 5 - Overseas Presence and Force Projection*
- JMA 6 - MOOTW*
- JMA 7 - Special Operations*
- JMA 8 - Command and Control*
- JMA 9 - Comm/Computer Environment*
- JMA 10 - Information Operations*
- JMA 11 - ISR*
- JMA 12 - Logistics*
- JMA 13 - Force Protection*
- JMA 14 - Multinational Ops/Interagency Coordination*

To download documents referenced in this brief, go to the JI&I IER Training Site, and look under the Resources link at <http://www.teao.saic.com/jfcom/ier/resources/resources.htm>