



JOINT REQUIREMENTS  
OVERSIGHT COUNCIL

THE JOINT STAFF  
WASHINGTON, D.C. 20318-8000

JROCM 173-07  
16 July 2007

MEMORANDUM FOR DISTRIBUTION

Subject: Net-Enabled Command Capability Increment One Capability  
Development Document

1. The Joint Requirements Oversight Council (JROC) approves the Net-Enabled Command Capability (NECC) Increment **One Capability** Development Document and Extensions, and validates the enclosed key performance parameters and key system attributes. The JROC will maintain approval authority for all key performance parameter changes, delegates capability development document approval authority oversight for changes to key system attributes to the Joint Capabilities Board, and delegates capability development document approval authority for all other non-key performance parameter/non-key system attribute changes to USJFCOM via the Joint Combat Capability Developer organization as outlined in the capability development document. Capability developers will use the NECC Capability Development Document and Extensions as the initial statement of validated capability needs for all phases of development. This program is assigned the Joint Potential Designator of "JROC Interest."
2. USJFCOM, working in concert with the Services and appropriate agencies, will determine program funding requirements for POM 2010 and beyond.
3. Should the Defense Information Systems Agency encounter costs exceeding ten percent of the approved acquisition program baseline or 25 percent of the original program baseline (Program Acquisition Unit Cost/Acquisition Procurement Unit Cost), they shall return to the JROC prior to reprogramming or budgeting additional funding into the program.
4. The JROC recognizes the importance of the NECC program and requests USJFCOM return to the JROC to provide annual program updates.

  
E. P. GIAMBASTIANI  
Admiral, US Navy  
Vice Chairman  
of the Joint Chiefs of Staff

Enclosure

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**Net-Enabled Command Capability (NECC)  
Capability Development Document (CDD)  
Linked Extension A – Integrated Architecture  
Products**

**Increment: I**

7 June 2007

This document has been approved by J8 for release to  
Australia, Canada, and Great Britain

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## **Foreign Releaseability**

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**Extension A - Integrated Architecture Products**

**AV-1 Overview and Summary Information – All View**

**IDENTIFICATION**

**Table A-1. All View (AV-1)**

<b>Name:</b>	Net-Enabled Command Capability (NECC) Architecture Version 1.0
<b>Short Name:</b>	NECC Architecture V1.0
<b>Tasking Origin:</b>	Joint Staff J6
<b>Organization Developing Architectures:</b>	JFCOM , DISA, Army, Navy, Marine Corps, Air Force
<b>Assumptions and Constraints:</b>	New technologies will presumably evolve and develop beyond present forecast. NECC is constrained within the existing technologies made available during each Increment.
<b>Approving Authority:</b>	Joint Staff J6
<b>Level of Effort / Cost:</b>	TBD
<b>Architecture Classification:</b>	Unclassified

**SCOPE**

The majority of NECC Version 1.0 is cast against two distinct epochs, 2008 and 2010. The former represents a baseline and near-term view of NECC Increment I initiation, while the latter depicts the culmination of Increment I and phased start of Increment II. Provided is a high-level, overarching, conceptual NECC program representation (OV-1). Also included are the required OV and Systems View (SV) architectures for the overall program with emphasis on Increment I capabilities. The identified Increment I capabilities are highlighted.

- NECC baseline architecture will cross the strategic, operational, and tactical levels, depicting end-to-end processes addressing maintenance of a COP and CTP throughout the planning and execution phases.
- The architecture will focus on the interoperability of NECC to generate desired effects through linking sensors, delivery systems, and effects across

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Services/Agencies/Coalition-Multinational Forces provided systems, data and information sources.

- NECC includes all activities to maintain battlespace situational awareness for the NMCS, JFC (Combatant Commander (CCDR), subunified commander or JTF commander), Functional and Service Component Commander, and JPEC and to protect network operations. The focus is on the exploitation of IERs to build a tailored, integrated picture for the JFC.
- NECC activities will support theater planning, air and space strategy development [e.g., Joint Air Operations Plan (JAOP)], force tasking [e.g., Air Tasking Order (ATO), Space Tasking Order (STO)], and unit-level planning (e.g., mission planning).
- NECC activities will support the planned and dynamic execution of Service and Functional Component operations. They will also document the dynamic planning and assessment activities associated with the dynamic execution of air, land, maritime and space operations.
- NECC activities will support the formal assessment of execution operations. In 2006, this model captures combat assessment of daily operations. By 2008, the model expands to include campaign and net-centricity assessments. Like the other series, Assessment becomes effects-focused. Formal assessment becomes much more fluid and responsive to operational needs, i.e., it affects ongoing Daily Tasking Orders (DTO) operations.

The 2008 views also integrate applicable DOD GIG NCOW architecture models. The NCOW model is currently under development. Thus, only higher-level, stable activities were incorporated within Version 1.0. As the NCOW matures, additional integration is expected.

## Products:

Version 1.0 contains the following architecture products:

Product	Short Name	Initial Working Form	Epochs/Threads
Overview and Summary Information	AV-1	Word Document Excel Spread Sheet	AV-1 applies to all areas of Version 1.0.
High-Level Operational Concept Description	OV-1	Power Point	2008 thru 2013
Operational Node Connectivity Description	OV-2	Excel Spread Sheet	2008 thru 2013
Organizational Relationships	OV-4	SLATE / Power Point	2008 thru 2013.

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<b>Product</b>	<b>Short Name</b>	<b>Initial Working Form</b>	<b>Epochs/Threads</b>
Operational Activity Model	OV-5	SLATE / Power Point	2008 thru 2013
Operational Event – Trace Description	OV-6c	SLATE / Power Point	2008 thru 2013
Logical Data Model	OV-7	TBD	Future Development
Systems Interface Description	SV-1	Power Point	2008 thru 2013
Communication Description	SV-2	SLATE / Power Point	2008 thru 2013
Functionality Description	SV-4	SLATE / Power Point	2008 thru 2013
Operational Activity to Function Traceability Matrix	SV-5	SLATE / Power Point	2008 thru 2013
Data Exchange Matrix	SV-6	Excel Spread Sheet	2008 thru 2013
Physical Schema	SV-11	TBD	Future Development
Technical Standards Profile	TV-1	Excel Spread Sheet	TV-1 applies to all areas of Version 1.0

## **PURPOSE AND VIEWPOINT**

NECC will be the DoD's principal C2 information technology capability. NECC will enable decision superiority via advanced distributive collaborative information sharing achieved through vertical and horizontal NECC interoperability. When complete, NECC Architecture will define the current and future processes, information flows, operational and system nodes, associated system functions, systems, networks, technology and standards necessary to implement NECC. As NECC is in the pre-Milestone B phase, user requirements for new capabilities and migration of capability from GCCS to NECC have not yet been fully defined

and decomposed, therefore architecture representations (diagrams, descriptions and C2 node relationships) are estimated. Architectural representations will be updated on a continuous basis by the JCCD (non-KPP/non-KSA authority requirements sponsor), as user requirements are gathered, identified, validated, and analyzed so that capabilities are described in measurable and testable terms as a part of the JCCD process.

This Overview and Summary (AV-1) defines the first phase (Version 1.0) of a multi-phased architecture effort to architecturally render NECC. The first phase (Increment I) Milestone B is scheduled for FY07 with Milestone C and culmination of Increment I scheduled for FY10.

Version 1.0 exploits “As-Is” Joint and Service C2 architectures to create detailed representations of NECC Concept and architectures.

This Phase is a sub-enterprise level architecture, i.e., it defines the highest-level aspects of NECC but does not include all of the functionalities and associated systems. Future phases of the architecture will provide further depth and extend the scope.

## **Intended Use:**

Version 1.0 is intended to:

- Document a core set of processes, information flows, operational and system nodes, system functions, systems, networks, technology and standards for use by DOD and Service architectures.
- Support Program Objective Memorandum (POM) and Annual Planning and Programming Guidance (APPG).
- Support NECC definition and conceptual design.
- Provide targets for NECC roadmaps planning and development.
- Support requirements development and early milestone decision reviews.
- Support Concept of Operations (CONOPS) maturation, evolution and configuration management.
- Validate NECC related CONOPS as applied to theater operations.
- Link ongoing Joint and Service architecture efforts to ensure alignment with NECC.
- Facilitate GES architecture compliance.
- Prototype uses of architecture specifically as a tool to align capital investments as required by the Clinger-Cohen Act.
- Prototype the integration of other architecture models developed from different viewpoints, outlooks and assumptions.
- Facilitate macro-level portfolio management to allocate resources across strategic areas.
- Facilitate micro-level portfolio management to select and prioritize specific programs.

## **Anticipated Decisions:**

HQ Joint Forces Command (JFCOM) will direct:

- The Services architecture communities to use the Version 1.0 core set of processes, information flows, operational and system nodes, system functions, systems, networks, technology and standards as the foundation for sub-level (thread/node) architectures.
- Subordinate functions to use this architecture supporting POM development.
- A follow-on architecture effort, expanding upon Version 1.0.
- The Services to use architectures to refine and validate NECC definition and conceptual design
- The Services to support Version 1.0 follow-on efforts
- The Services to ensure sub-level architecture operational views are consistent with applicable Version 1.0 products
- Subordinates to use architecture to develop or support applicable NECC roadmaps, requirements, and CONOPS

### **Anticipated Impacts:**

- Adjustment to 2008 POM development guidance
- Increased consistency between NECC and sub-level architectures
- Refinement of CONOPS, roadmap, and requirements
- Compliance with Baseline NCES Architecture
- Identified integration opportunities

### **Viewpoint:**

The architecture focal point is the NMCS, JFC, CCDRs, Functional and Service Component Commander, the JPEC, JTF HQ and Functional Component Commanders. Future increments of NECC will provide C2 capability to joint and service commanders and unit leaders at tactical levels below the JFC/JTF Service/Functional Component Commanders.

Guided by overarching strategic direction (e.g. National Security Strategy, National Military Strategy, Joint Vision, Defense Planning Guidance, Chairman's Joint Operations Concepts, Joint Operation Planning and Execution System Strategic Concept), NECC will provide an unmatched C2 decision-making capability and enables joint forces to achieve previously unattainable operations tempo.

### **CONTEXT**

Version 1.0 details NECC's core set of processes, information flows, operational and system nodes, systems and system functions directly supporting the NMCS, JFC, CCDR, the JPEC, JTF HQ and Functional Component Commanders. The architecture does not document an operational node's internal processes, activities, and associated information exchanges unless they have a direct bearing on those operations.

### **Scenario:**

A CCDR will designate a JTF to direct “Major Combat Operations” in a Theater to “Decisively Defeat” an adversary. The CJTF will designate functional component commanders. JCS alert/warning orders will assign support responsibilities to several CCDRs and other Joint and National organizations. The Joint Force shall include multinational (Allied and Coalition) partners. Deployment of forces will occur and continue throughout while persistent operations are underway. The CCDRs will be responsible for related daily guidance and have tasking authority over assets assigned attached or made available. The CCDRs will manage theater-wide, time sensitive operations to include specific mission assigned to them [i.e. Combat Search and Rescue (CSAR)]. The architecture must support a Component Commander from any Service Component; therefore the node structure must be able to reflect an air/ground/maritime-based component commander NECC construct.

### **Assumptions and Constraints:**

- Availability of designated nodes to support the scenario.
- Establishment of functional competency within the Joint Force to address major combat operations.
- Establishment of Content Management organizational construct within the various Components for 2008 operations.
- Robustness of the GIG and associated enterprise services by 2012.
- Joint acceptance of an effects based approach to operations approach by 2012.
- Authorized Direct Liaison Authorized (DIRLAUTH) between Service/Functional Component Commanders and supporting operations centers.

### **Node List:**

See Figure A-2 for a complete list of nodes.

### **TOOLS and FILE FORMATS**

MS Office (Word, Power Point and Excel)  
Adobe Portable Document Format (PDF)  
System Level Automation Tool for Engineers (SLATE)

### **FINDINGS**

TBD

OV-1 High Level Operational Concept Description

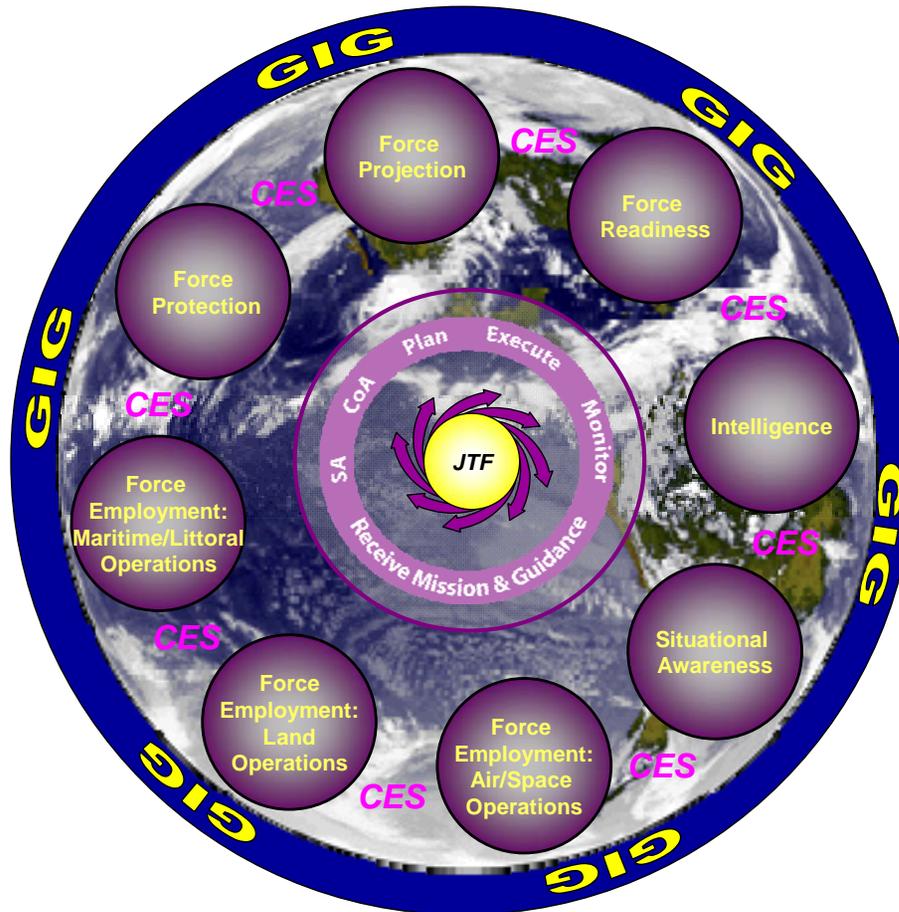


Figure A-1. NECC OV-1

**Textual Description of OV-1.**

NECC will contain the trained personnel, policy, procedures, and GIG ES based applications required to maintain situational awareness and plan, execute, monitor, and assess joint and multinational operations. NECC will effectively operate on garrison and deployed network environments with ever increasing bandwidth constraints providing secure access to Service/Agency/joint data sources and applications, and will support information exchange across multiple security domains. NECC will enable decision superiority via advanced distributive collaborative information sharing achieved through vertical and horizontal NECC interoperability.

NECC will support planning, execution, monitoring, and assessment of joint and multinational operations. Development and implementation of the Standing Joint Force Headquarters (SJFHQ) is integral to the DOD's efforts to strengthen joint operations and improve joint C2.

The OV-1 graphic is made up of the following portions:

- The center circle depicts the globally dispersed NECC capability to support the Joint Task Force in the conduct of Joint Command and Control as described by the Joint Functional Concept (Receive Guidance & Mission, Monitor and collect data, Develop an understanding of the situation, Develop and select a Course of Action, Develop a plan, Execute the plan, and Monitor execution and adapt as necessary).
- The 8 spheres represent NECC Mission Capabilities Packages enabling planning, execution, monitoring, and assessment of joint and multinational operations,
- The highlighted background portion represents the global aspect of the Core Enterprise Services which will be used to enable NECC to interface between the Users, and
- The outer encompassing ring symbolizes the GIG providing a secure garrison /deployable network connectivity and shared access to Service, Agency, and joint-provided data sources for warfighters, decision-makers and support organizations worldwide.

**OV-2 Operational Node Connectivity Description**

Figure A-2-1 and A-2-2 graphically displays the high level NECC Operational Node Connectivity.

**Textual Description of OV-2.**

NECC OV-2 Part I (Figure A-2-1) depicts the operational nodes and their overarching need lines (NL-1 through NL-8) exchanging information in a net-centric environment .

NECC OV-2 Part II (Figure A-2-2) depicts the details of operational nodes overarching needlines (NL-1 through NL-8) exchanging information (send/receive) across each of the Mission Capability Packages (MCPs) categories. The information exchange approach taken in the development of this OV2 is holistic and comprehensive, rather than discrete and exclusionary. That means that there is IER overlap and duplication across the MCP categories. Each needline is represented by a number, and contains one or more identified information exchanges. The Legend entitled NECC OV-2 IER Legend, provided in Figure A-2-3A through A-2-3C lists the information elements associated with each need line.

NMCS includes the President, Secretary of Defense, and Chairman Joint Chiefs of Staff. Combatant Commands include supported and supporting commands. JTF components are comprised of the JTF functional/Service components and include information exchange with Service HQs and major commands, as required. IC components include the Defense Intelligence Agency (DIA), Central Intelligence Agency (CIA), National Geospatial-Intelligence Agency (NGA), National Reconnaissance Office (NRO), Service Intelligence Centers and Activities, and National Security Agency (NSA). HS/HD components include the Department of Homeland Security, White House Office of Homeland Security, and Federal Bureau of Investigation (FBI). DOD agencies include combat support agencies [e.g. Defense Information Systems Agency (DISA), Defense Logistics Agency (DLA), Defense Threat Reduction Agency (DTRA), Defense Contracts Management Agency (DCMA)].

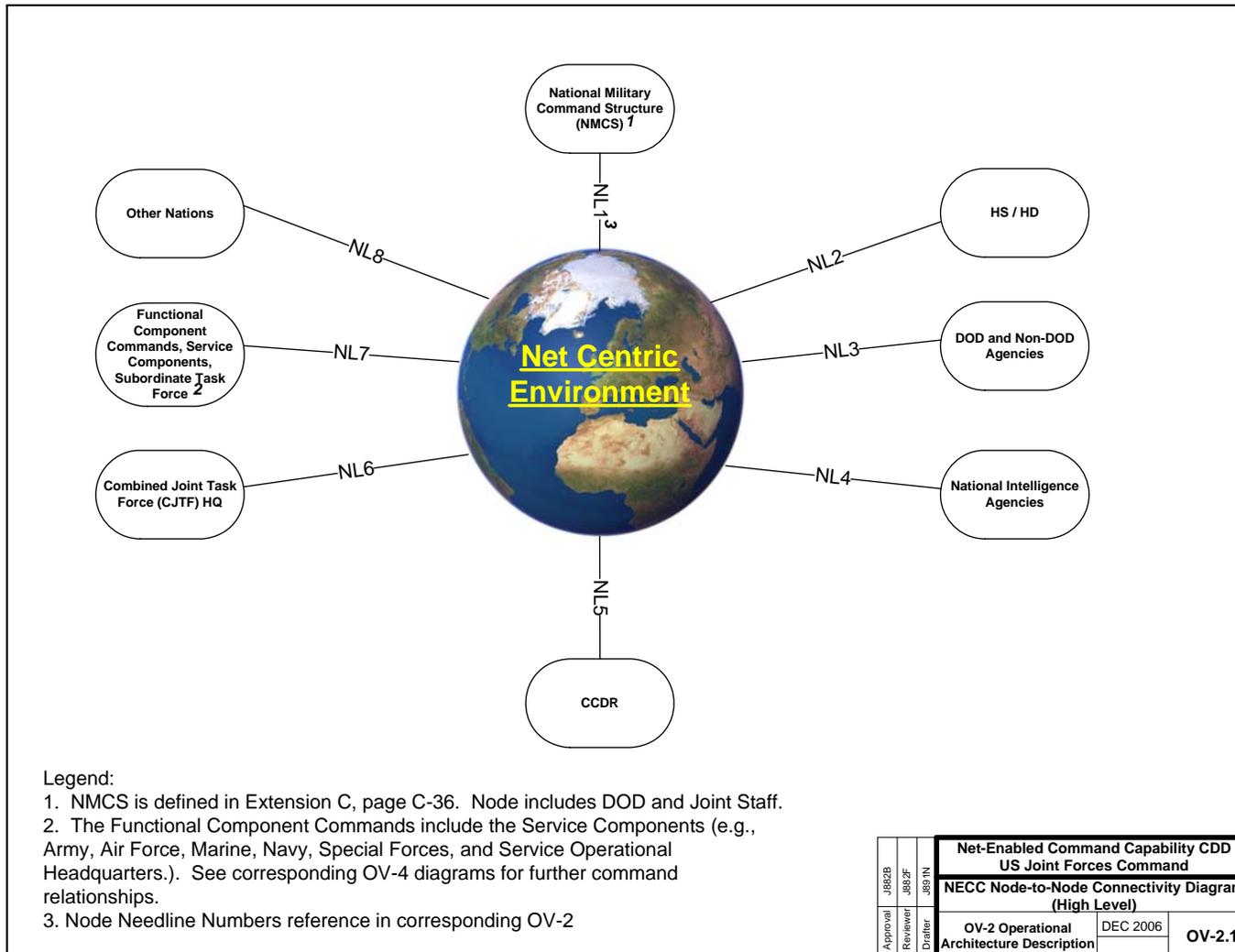


Figure A-2-1. NECC OV-2 (Part I)

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NECC Capability Development Document Extensions – Version 1.0

7 June 2007

## Net-Enabled Command Capability (NECC) Operational Node Connectivity Description OV-2

MCP	Force Projection		Force Readiness		Intelligence		Situational Awareness		Force Employment		Force Protection
	Information Exchanges (IE's)										
Operational Nodes	Send	Receive	Send	Receive	Send	Receive	Send	Receive	Send	Receive	Send
NL-1 NMCS	4, 6, 7, 11-13, 16, 24	1-7, 9-13, 14-16, 17-19, 21-28, 33-37, 43, 66-68	1-3, 10, 11, 14, 15, 16, 43, 45, 65, 66, 67	1-3, 8, 10, 11, 14-16, 43, 45, 65, 66, 67, 68	17	17, 19, 24, 29, 25, 32, 33, 39	1-4, 6, 7, 10-23, 26, 27, 32-33, 43-60, 62-67	1-8, 10-40, 43-67	46, 50, 51, 57	3, 10, 15, 46, 50, 5, 57	4, 6, 17-23, 26-27, 32, 33, 43-60, 62-65
NL-2 HS/HD	1, 4, 6, 7, 8, 10, 12, 66-68	1, 3, 4, 6, 7, 8, 10, 12, 13, 43, 66-68	14-16, 66-68	14-16, 66-68	39, 53 - 56	17-23, 38, 39, 53-56,	4-7, 12, 17-23, 39, 43, 44, 46-60, 64-68	1-8, 10-40, 43-68	4, 6, 10, 17, 19, 22, 39, 46, 50, 55, 64	7, 17, 19, 22, 28, 39, 50, 55, 59, 64	4-7, 17-23, 43, 44, 46-60, 64, 65
NL-3 DOD and non-DOD Agencies	7, 8, 9, 10, 11, 12, 13, 46, 66-68	7,8,9,10,11, 12, 13, 14-16, 43, 46, 66-68	14-16, 43, 45, 66, 67, 68	1-3, 8, 14-16, 43, 45, 66, 67, 68	17, 18, 19, 18, 39	17, 18, 19, 22,23, 33, 38, 39	1-3, 7-10, 12-16, 23, 26, 43, 45, 66-68	1-8, 10-40, 43-68	50, 53, 59	50, 53, 59	4, 6, 12, 17, 19, 43, 46, 64, 65
NL-4 IC Components	4, 7, 17-23, 24-28,32-37, 54-61	4, 7, 17-23, 24-28, 32-37, 43, 53-61	14-16, 45, 66, 67, 68	14-16, 45, 66, 67, 68	17-18, 19-22, 24, 26, 27, 31-42, 54, 56	32-39, 41, 54, 56	4,7,17-60,61, 64, 65	1-8, 10-40, 43-65	17-49, 53, 54, 56, 59	17-49, 53, 54, 56, 59	4, 17-23, 26-27, 32-40, 43-60, 64, 65
NL-5 CDR	1-13, 14-16, 17-23, 24-28, 43-48, 51, 53-61, 67-68	1-13, 14-16, 17-23, 24-28, 33-37, 43-48, 51, 53-61, 66-68	1-3, 10, 11, 14-16, 45, 66, 67, 68	1-3, 8, 10, 11, 14-16, 45, 66, 67, 68	17-21, 23-25, 27, 31-39, 41, 42, 54, 56	17-23, 24, 25, 26-29, 29A, 30-39, 41, 42, 54, 56	1-61, 64, 65, 67-68	1-8, 10-40, 43-68	19, 22-48, 49-51, 53-61	17-61	4-7, 17-23, 26-27, 32-40, 43-60, 64, 65
NL-6 JTF	1-13, 14-16, 17-23, 24-28, 43-48, 51, 53-61, 67-68	1-13, 14-16, 17-23, 24-28, 33-37, 43-48, 51, 53-61, 66-68	1-3, 10, 11, 14-16, 45, 66, 67, 68	1-3, 8, 10, 11, 14-16, 45, 66, 67, 68	8, 17-21, 23-25, 27-29, 29A, 30-39, 41, 42, 54, 56	17-29, 29A, 30-42, 54, 56	1-61, 64, 65, 66, 68	1-8, 10-40, 43-68	19, 22-42, 49, 50, 51, 53-61	17-61	4-7, 17-23, 26-27, 32-40, 43-60, 64, 65
NL-7 Functional Components	1-13, 14-16, 17-23, 24-28, 43-48, 51, 53-61, 67-68	1-13, 14-16, 17-23, 24-28, 33-37, 43-48, 51, 53-61, 66-68	1-3, 10, 11, 14-16, 45, 66, 67, 68	1-3, 8, 10, 11, 14-16, 45, 66, 67, 68	17-21, 23-25, 27-29, 29A, 30-39, 41, 42, 54, 56	18-29, 29A, 30-42, 54, 56	1-61, 64-68	1-8, 10-40, 43-68	19, 22-49, 50, 52-57, 59	17-61	4-7, 17-23, 26-27, 32-40, 43-60, 64, 65
NL-8 Multinational Components	3, 4, 8, 12	3, 4, 6, 8, 12, 13, 43	3	3	17, 23, 29, 32-39, 54, 56	17, 23, 29, 32-39, 54, 56	4-8, 17-60, 64, 65	1-8, 10-40, 43-65	17-22, 24-42, 53, 55-57, 59	17-22, 24-42, 53, 55-61	4-7, 17-23, 26-27, 32-40,43-60, 64, 65

Figure A-2-2. NECC OV-2 (Part II)

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NECC Capability Development Document Extensions – Version 1.0

7 June 2007

## NECC CDD OV-2 IER LEGEND (Ref: JC2 ORD OV-3)

1	Force movement requirements; Non-unit cargo resupply and personnel movement requirement estimates	24	Standard target numbering data; Target data; Political-military objectives and strategy-to-task data; Target System Analysis (TSA) data; Digital target materials	46	Situational awareness; Higher Headquarters (HHQ) guidance; Global Battle Manager/Theater Battle Manager/ (GBM/TBM) /CBRNE event
2	U.S. Transportation Command (USTRANSCOM) movement schedule/plans; Force/channel traffic requirements; Strategic movement requirements; Planned forces and logistics requirements	25	Target lists; Candidate Target List (CTL); Target Nomination List (TNL), Joint Integrated Prioritized Target List (JIPTL)	47	Situational awareness; Targets; Enemy/neutral/unknown multi-format track-feeds; Enemy Order of Battle, High-interest, and correlated SIGINT, ELINT, COMINT, IMINT, MASINT, HUMINT data; Geospatial intelligence data
3	Status/arrival of forces in theater (by Unit Identification Code (UIC), unit type, Unit Line Number (ULN)); Associated unit sustainment data; Sustainment estimates; Combat power and combat power ratio of forces data; Force module data	26	Imagery metadata	48	Situational awareness; Moving target data; Unprocessed SIGINT, ELINT, COMINT, IMINT, MASINT, HUMINT data
4	Alert/Planning Order, OPORD, Joint Strategic Capabilities Plan (JSCP), Contingency Planning Guidance, OPLAN, CONPLAN, Functional Plan, TPFDD; CONOPS; Commander's Intent, Joint Prioritized Effects List, Apportionment Guidance; FRAGO	27	Lethal and non-lethal weaponeering analysis and calculations data; weather impacts/effects data	49	Airspace Control Measures (e.g., airspace control points, routes etc.) , Mission data; Special Instructions; JAOP, ATO, STO, Airspace Control Plan (ACP), Airspace Control Order (ACO), Air Defense plan (ADP)
5	Source to final destination force/non-unit transportation requirements; Transportation total asset visibility data (location/operational status); Transportation feasibility data; In-transit status of personnel and cargo movement; Transportation shortfalls; COA alternatives	28	Collection requirements nomination and product requests	50	Guidance, Policies, Considerations
6	Planning and execution orders; Orders and Alerts (changes, linkages, status of actions); Senior leadership decisions, guidance, and intent; Orders linkage information	29	Battle Damage Assessment (BDA) data	51	ROE, Apportionment
7	Deployment routing, overflight routes, and landing rights; Air refueling routes, requirements, timing, and schedules; Airfield data	29 A	Weapon-derived BDA data	52	Immediate air request
8	Forces mobilization data; Critical logistic resources data; Readiness status of deploying forces; Host-nation support agreements	30	Target briefs; User-configurable target reports	53	Situational awareness; Position report; Friendly Order of Battle

**Figure A-2-3A. NECC OV-2 IER Legend**

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## NECC CDD OV-2 IER LEGEND (Ref: JC2 ORD OV-3)

<b>9</b>	Acquisition and Cross-servicing Agreements; Civil Engineer Spt Plan	<b>31</b>	Target status	<b>54</b>	Situational awareness; Target data; Enemy OoB
<b>10</b>	Notional and actual force requirements/options; Potential combat, combat support, and combat service support units (active and reserve) for COA alternatives; Logistics requirements in selected functional areas; Joint Reporting Structure data	<b>32</b>	Validated collection requirements, CM information, collection request/status; Collection evaluation feedback	<b>55</b>	Situational awareness; Airspace control measures
<b>11</b>	Force lists; Force and logistic selection data; Deployment packages	<b>33</b>	Higher and subordinate headquarters priority intelligence requirements (PIR) and guidance; Requests for Information (RFI); target collection deck; Global Military Intelligence (GMI); Standard collateral collection messages, management publications, and directives; Standard intelligence requirements	<b>56</b>	Position reports; Intelligence summaries; ISR reports
<b>12</b>	Crisis management information	<b>34</b>	Platform/sensor TTP summaries and usage guidance information; Weapons Systems Characteristics and Performance data; Selected CM portals and databases; CM products, overlays	<b>57</b>	Orders, plans; Overlays, battlefield geometry; Fire support coordination measures; Mobility and counter mobility; ATO, STO, sortie allocation
<b>13</b>	Checklist of crisis actions; Planning support briefings	<b>35</b>	Collection plan; Friendly collection asset status, availability, utility, and requirement satisfaction data; Joint Integrated Prioritized Collection List (JIPCL);	<b>58</b>	Sortie allocation; Target list; Fire support coordination measures
<b>14</b>	US Armed Forces registered and measured units data	<b>36</b>	Intelligence collection management information; ISR asset capability, status, and current/planned employment data; Underlying data pertaining to ISR assets and status	<b>59</b>	Situational awareness; Threat warning
<b>15</b>	Force Readiness Total Force Analysis and Single/Multiple TPFDD Analysis Report	<b>37</b>	ISR strategy, detailed all-source collection plan, scheduled/projected ISR collection periods, graphic depiction of target-time-information need relationships data; Predicted terrain masking of sensors; Surveillance target and ground sensor data; IPB and METOC products; JIPCL	<b>60</b>	Situational awareness; Mobility/Counter mobility
<b>16</b>	Force Readiness Historical/Trends Analysis Report, Lessons Learned	<b>38</b>	RED/BLUE/GRAY forces data; All-source intelligence; BLUE logistics data; BLUE transportation network and critical infrastructure data; USMTF messages, local GMI; Intelligence journal/workbook	<b>61</b>	Situational awareness; Orders; Position reports; Overlays, battlefield geometry; Synchronization/planning matrices; Resource status

**Figure A-2-3B. NECC OV-2 IER LEGEND (Cont)**

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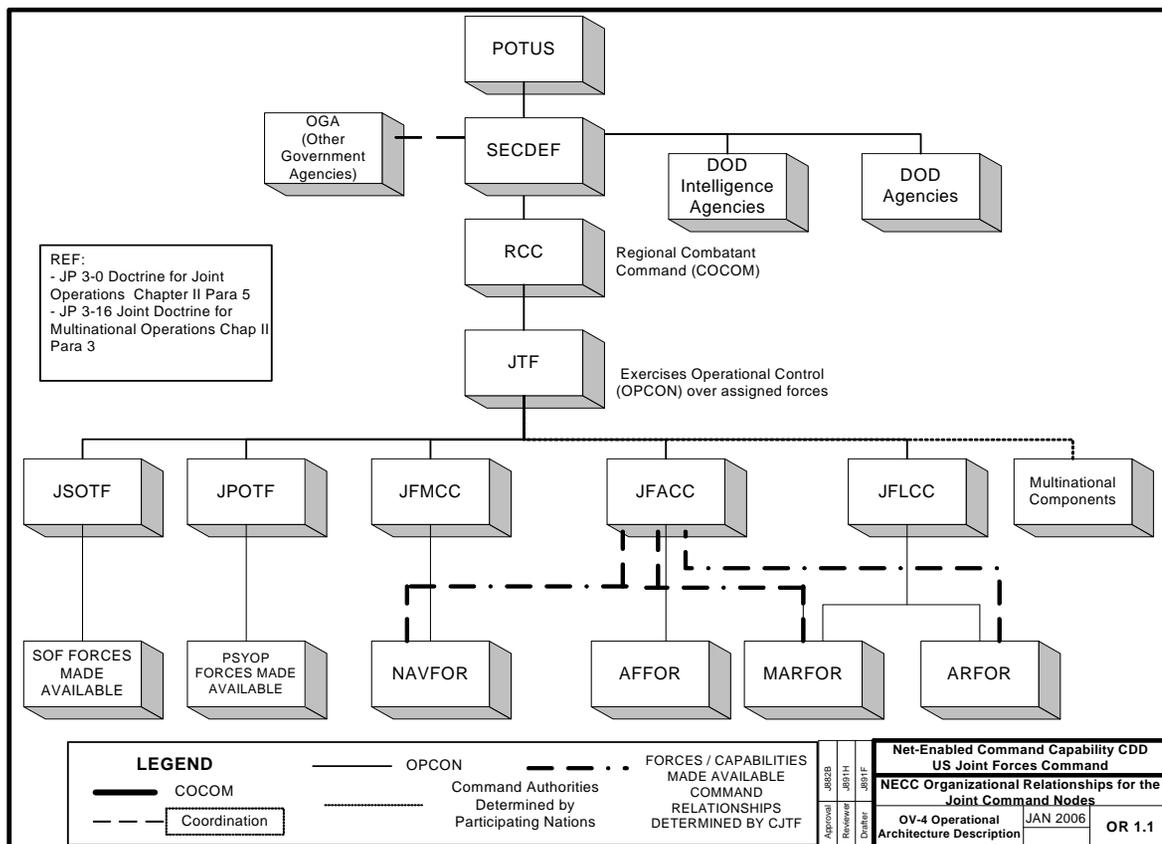
**NECC CDD OV-2 IER LEGEND (Ref: JC2 ORD OV-3)**

<b>17</b>	Dynamic threat assessments with known friendly vulnerabilities	<b>39</b>	Local, state, federal, and multinational government/ non-government agencies information; Country briefs	<b>62</b>	Situational awareness; Projected launch and impact point; Time of flight; JWARN message; Weapons of Mass Destruction (WMD) effects modeling
<b>18</b>	Minimum essential overlays, matrices, templates, charts, and other products	<b>40</b>	Latitude/Longitude coordinates, UTM, MGR, WGS-84, and elevations data	<b>63</b>	Situational awareness; BLUE GMD/TMD force status and capabilities; Integrated Air and Missile Defense (IAMD) IPB products
<b>19</b>	Trends and patterns of hostile actions; Potential hostile actors, methods, and activities data; Request for information (RFI); GMI	<b>41</b>	NSA Cryptologic Mission Management data; Signal analysis data	<b>64</b>	Situational awareness; Terrorist alerts and other advisories
<b>20</b>	Friendly and threat C4ISR architecture data; GMI	<b>42</b>	Virtual knowledge base (VKB) data	<b>65</b>	CBRNE information; Base and civil infrastructure details; Critical infrastructure details; Location/capabilities of specialty response personnel; Force protection guidance
<b>21</b>	Predicted enemy movement over well-characterized terrain data; GMI	<b>43</b>	Situational awareness; Position reports; Changes to force status; Friendly order of battle; Track updates, reports, messages, Joint Warning and Reporting Network (JWARN)	<b>66</b>	Combat, combat support, and combat service support units (active and reserve)
<b>22</b>	Geospatial intelligence data	<b>44</b>	Situational awareness; target data; GMI; blue, RED, Gray, Neutral force location/ disposition; Joint Coordination Measures (e.g., overlays, control points, routes, Restrictive Fire Area (RFA), Fire Support Coordination Line (FSCL), Engagement Area (EA), CBRN)	<b>67</b>	Overall, Personnel, Training, Equipment and Supplies (O PTES) Readiness, mission unique data
<b>23</b>	Weapons Systems Characteristics and Performance data; GMI	<b>45</b>	Situational awareness; Combat Service Support information; Force readiness; Unit capability	<b>68</b>	Availability information: strategic guidance, deployment/redeployment, etc. data, location and apportionment data

**Figure A-2-3C. NECC OV-2 IER LEGEND (Cont)**

**OV-4 Organizational Relationships**  
**OV-4 for Joint Command Organization**

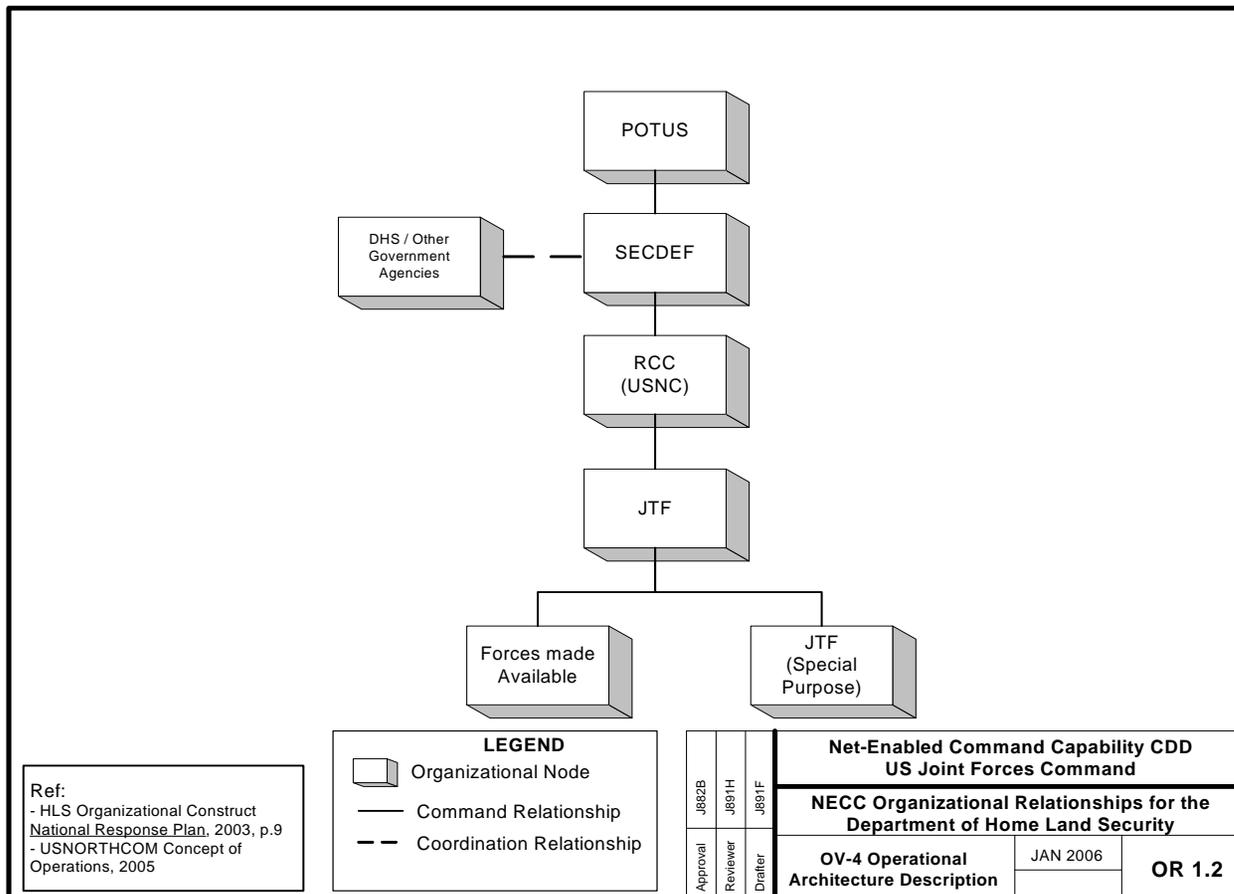
Figure A-3-1 displays the organizational command structure between the key commands and agencies within the NECC architecture. Service specific JTF Components are further defined in the Service Annexes. Forces and Capabilities that are made available through the CJTF are shown below extending from the JFACC. The same relationship lines could extend from the JFMCC or JFLCC as determined by the CJTF.



**Figure A-3-1. OV-4 for Joint Command Organization**

**OV-4: Organizational Relationships for the Department of Home Land Security (DHS)**

Figure A-3-2 displays the organizational command structure between the DHS and the DoD. Service specific JTF Components are further defined in the Service Annexes.



**Figure A-3-2. OV-4 for the Department of Home Land Security**

OV-4 Joint Forces Land Component Commander (JFLCC) Organizational Relationships

Figure A-3-3 represents the OV-4 for the JFLCC.

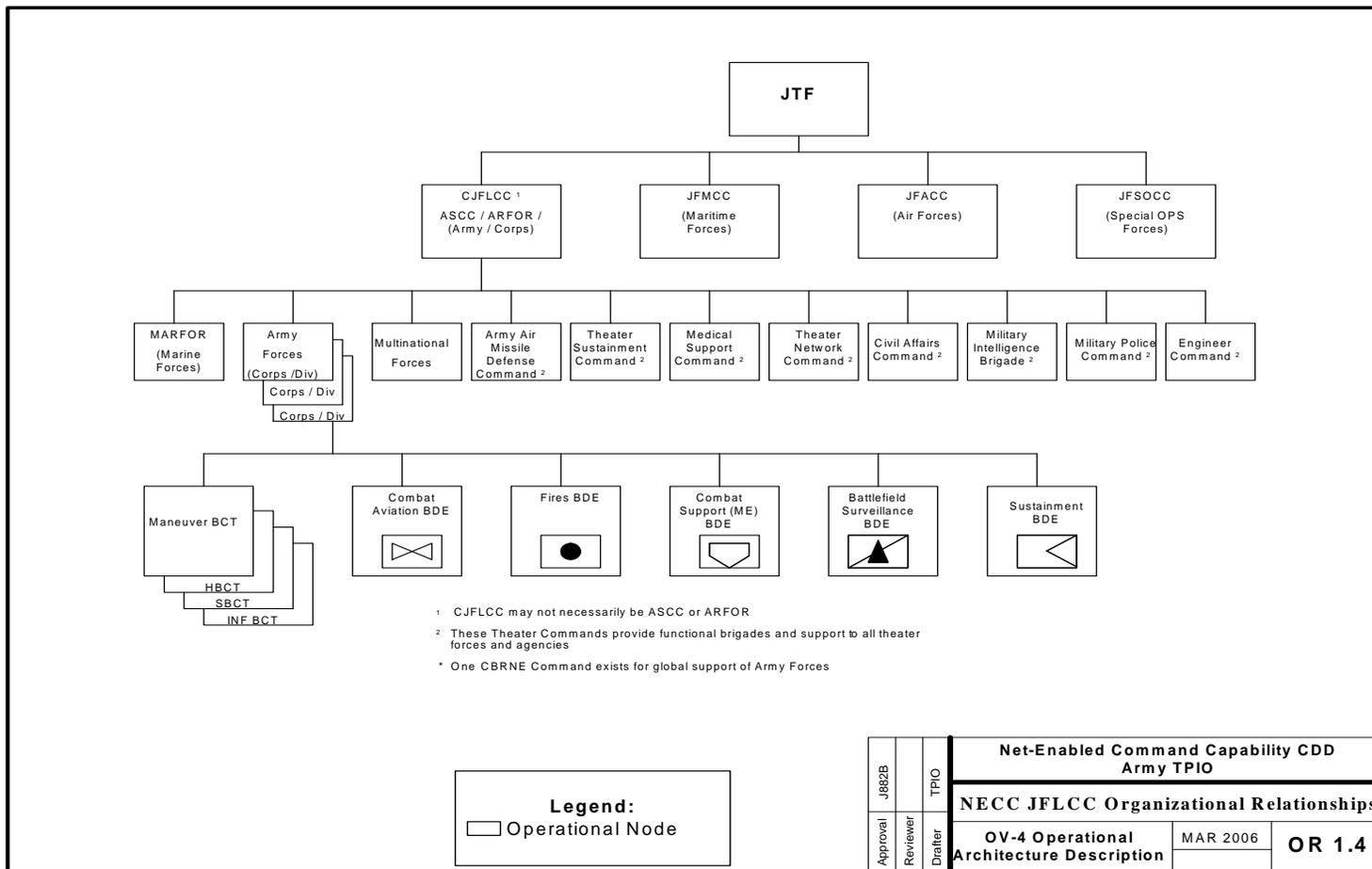


Figure A-3-3. OV-4 for the JFLCC

OV-4 Joint Forces Maritime Component Commander (JFMCC) Organizational Relationships

Figure A-3-4 represents the OV-4 for the notional JFMCC.

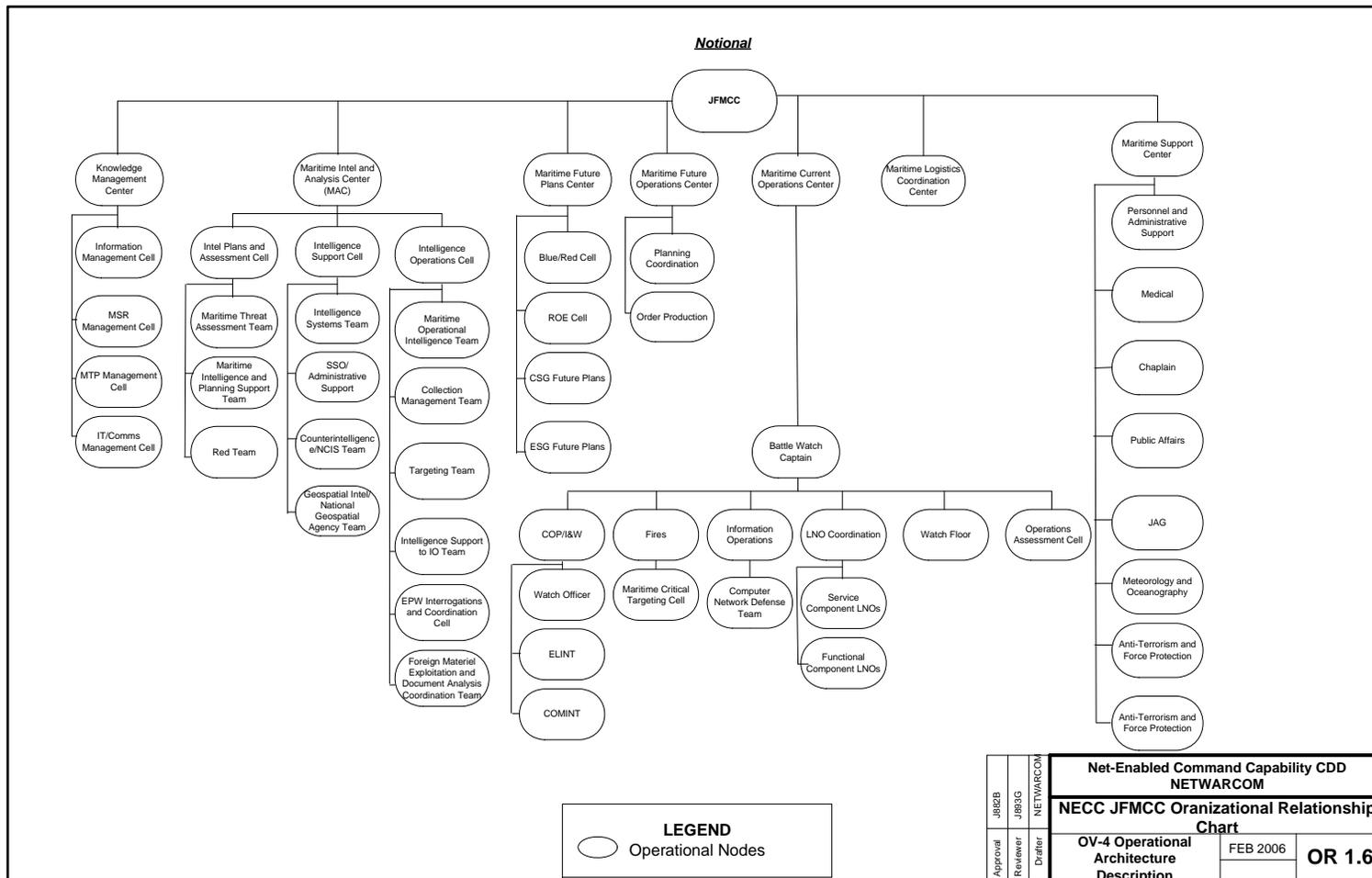


Figure A-3-4. OV-4 for the JFMCC

OV-4 JFLCC – Marine Expeditionary Forces (MEF) Organizational Relationships

Figure A-3-5 represents the OV-4 for JFLCC – MEF.

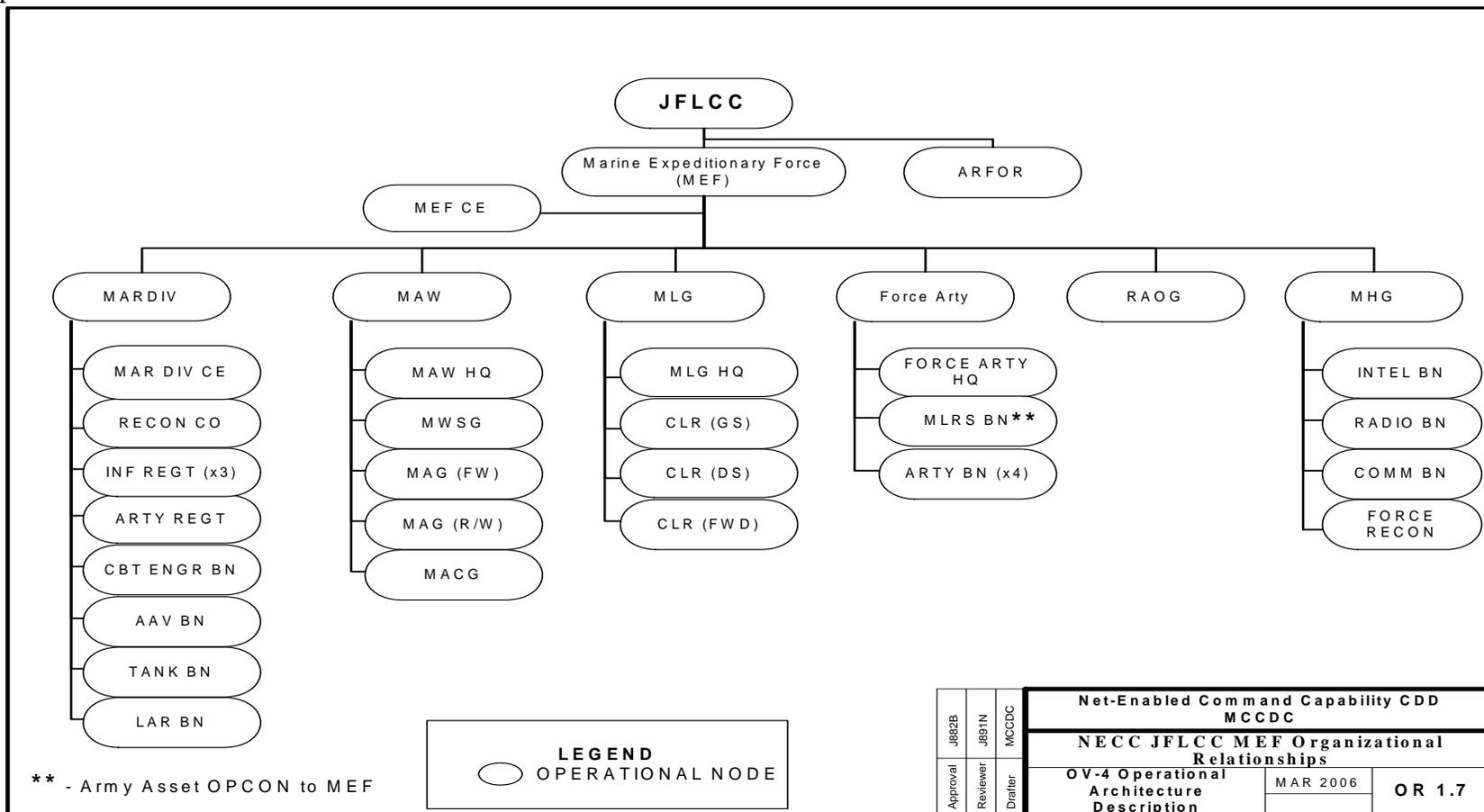


Figure A-3-5. OV-4 for the JFLCC – MEF

**OV-4 Joint Forces Air Component Commander (JFACC) Organizational Relationships**

Figure A-3-6 represents the OV-4 for JFACC.

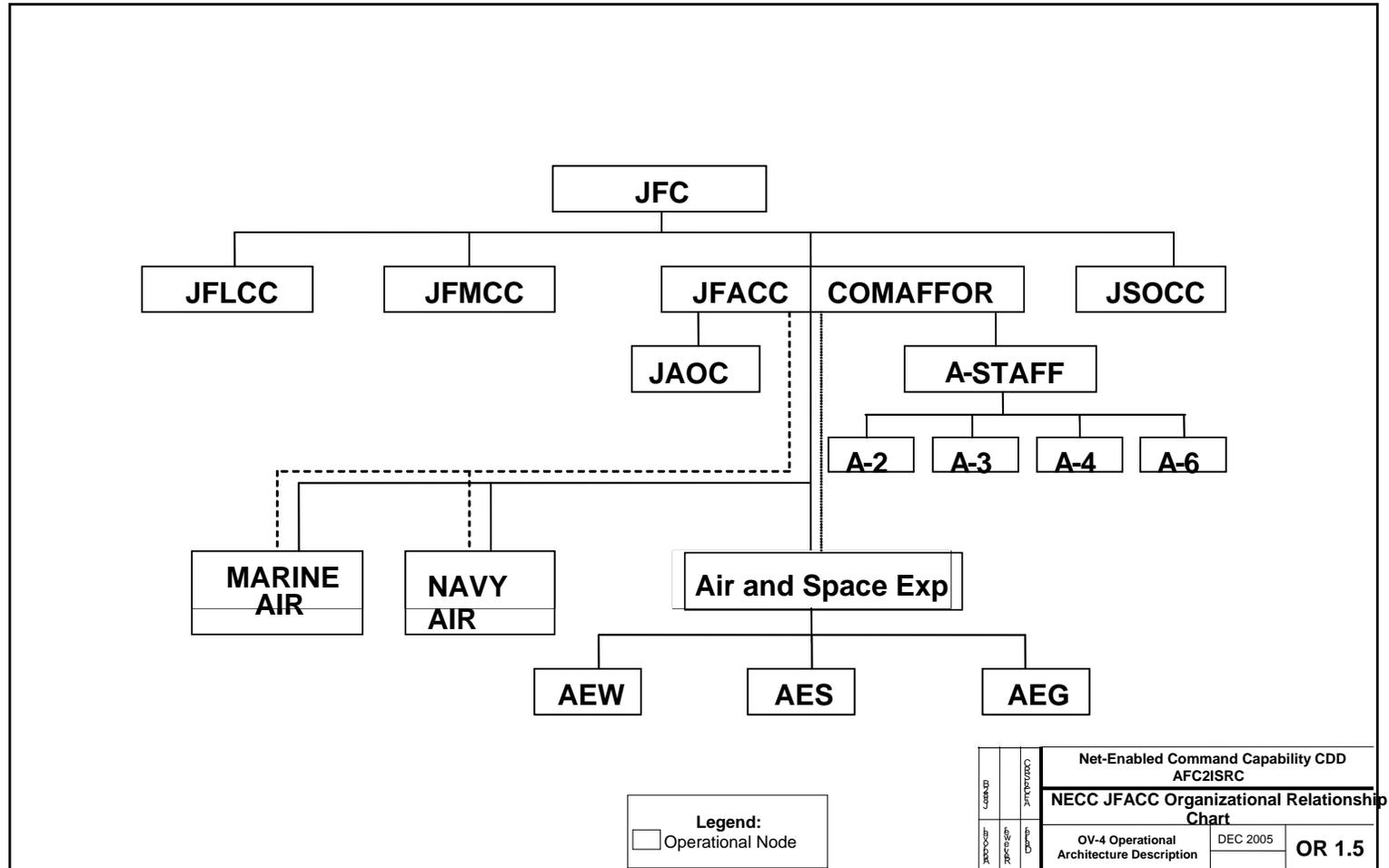
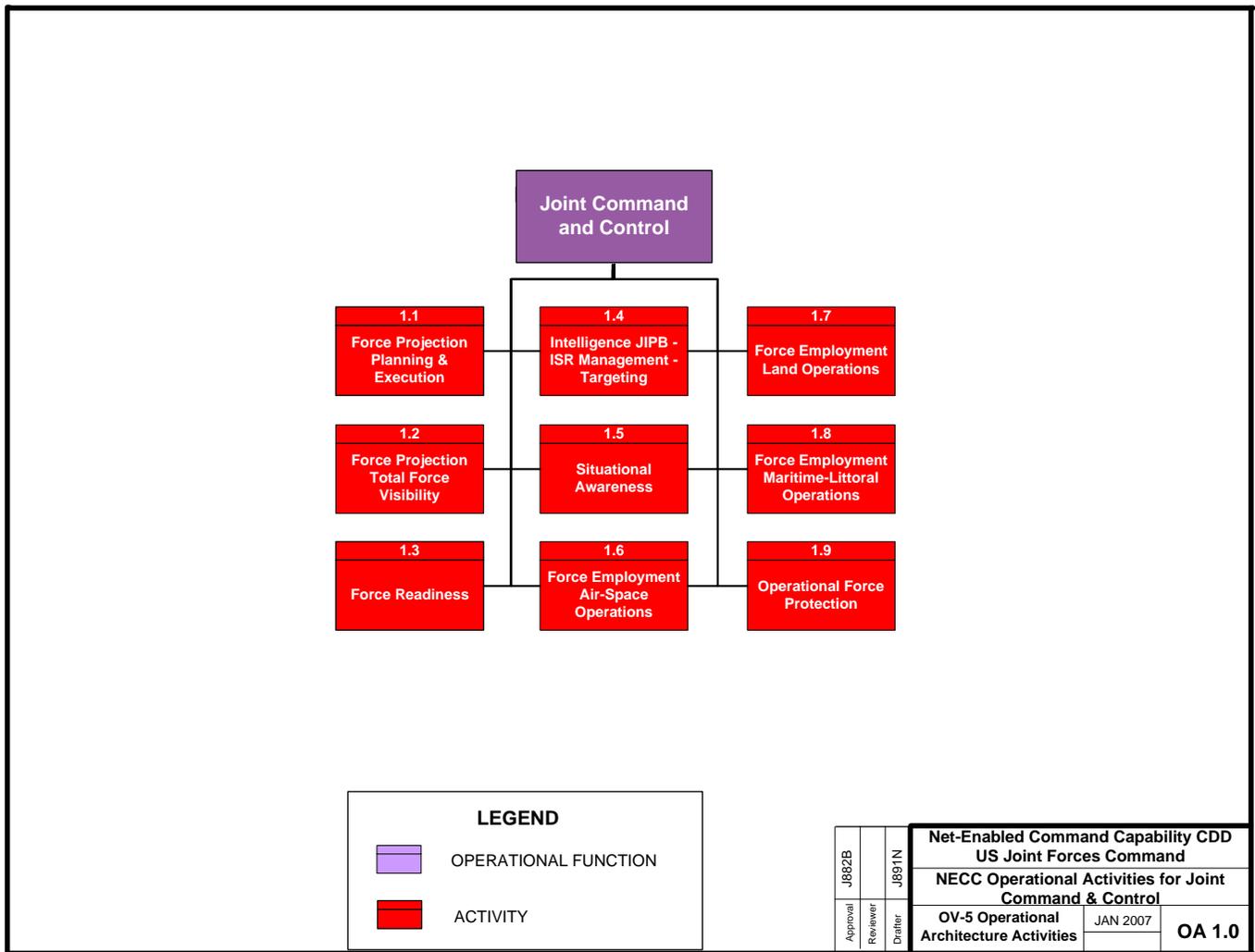


Figure A-3-6. OV-4 for the JFACC

**OV-5 Operational Activity Model for NECC**

The OV5 operational activity models are decomposed into Functions (purple), Activities (red), and Tasks (white) blocks. They are depicted in a DODAF compliant hierarchical view and not intended to suggest linear progression. Further, the decomposition from Functions to Activities to Tasks is a result of using a current architecture visualization tool. Tasks are merely the decomposition of an Activity into further detail. Not all Activities in the CDD decompose into Tasks.

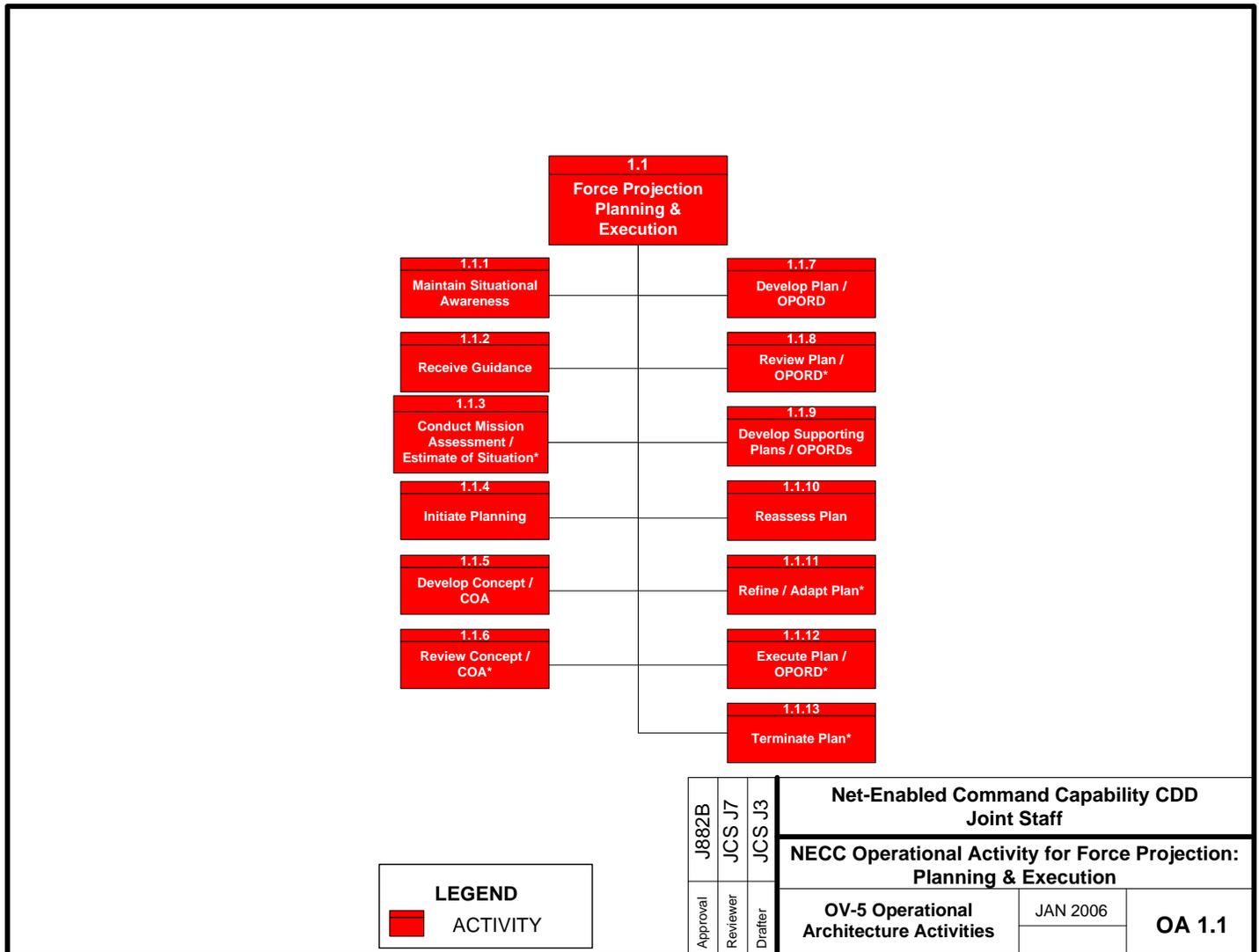
Figure A-4-1 is the operational activity model base map describing the operations of NECC. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-1. NECC OV-5**

**OV-5 Operational Activity Model for Force Projection – Planning and Execution**

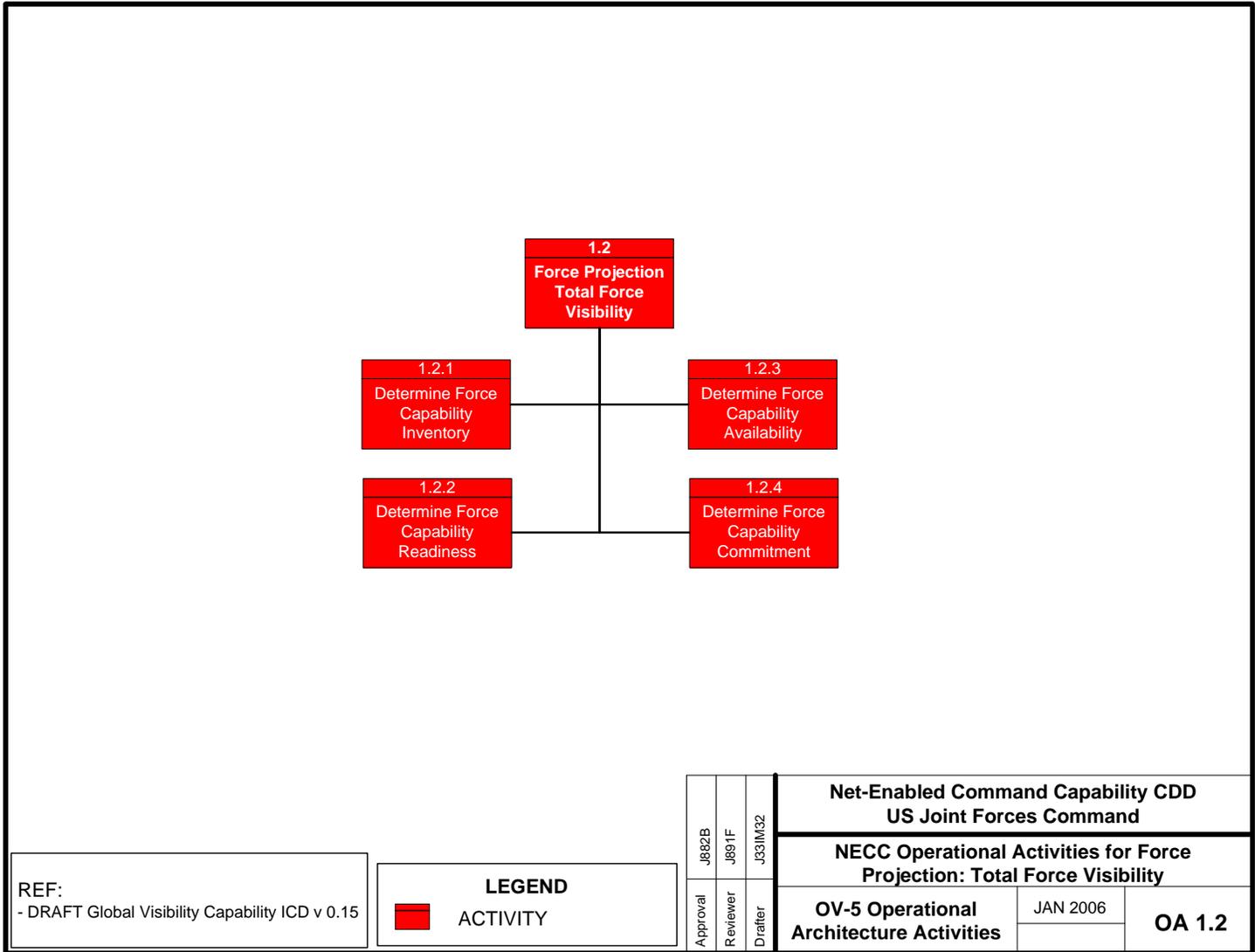
Figure A-4-2 is the operational activity model describing the operations of Force Projection – Planning and Execution. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-2. OV-5: Force Projection –Planning and Execution**

**OV-5 Operational Activity Model for Force Projection – Total Force Visibility**

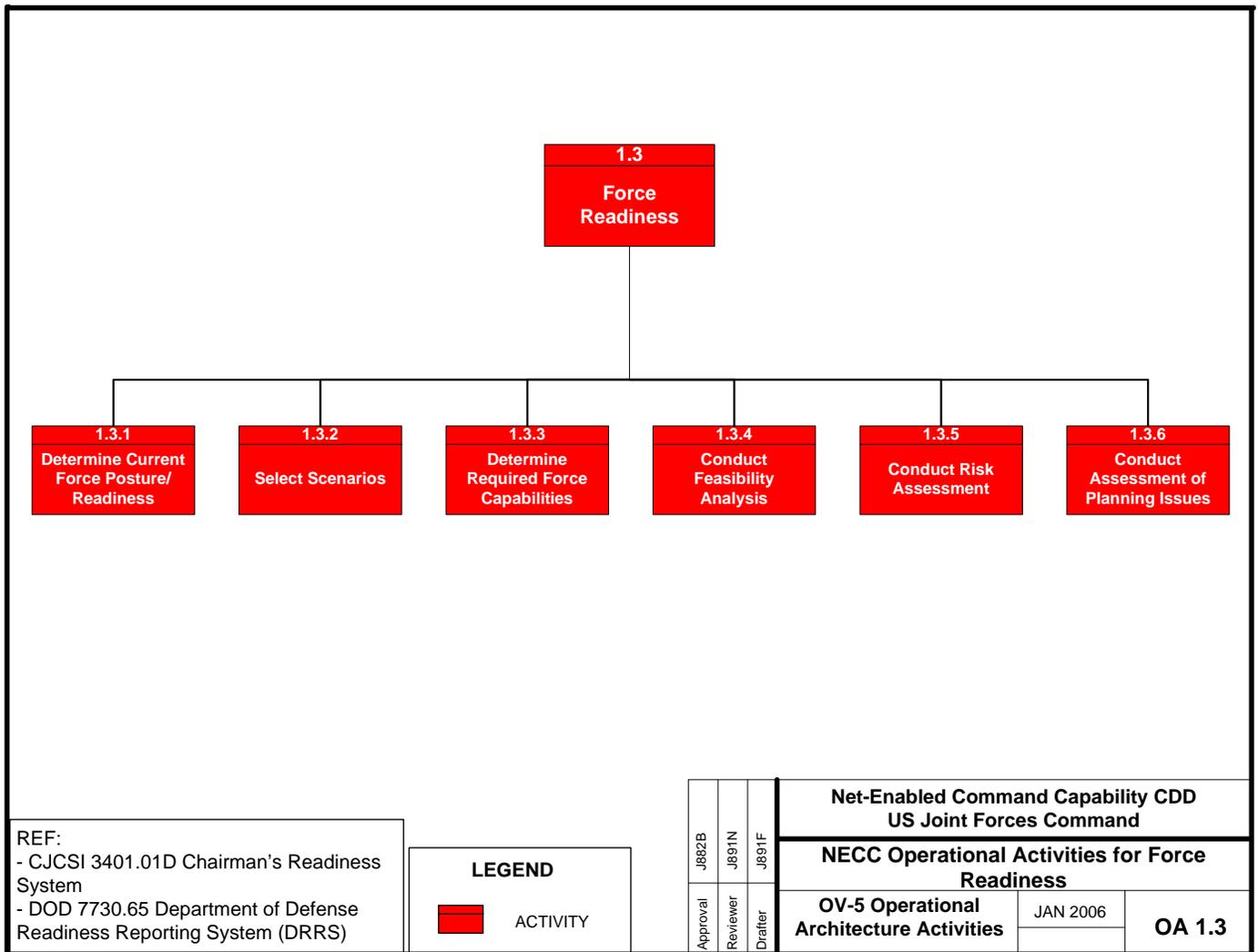
Figure A-4-3 is the operational activity model describing the operations of Force Projection – Total Force Visibility. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-3. JC2 OV-5: Force Projection – Total Force Visibility**

**OV-5 Operational Activity Model for Force Readiness**

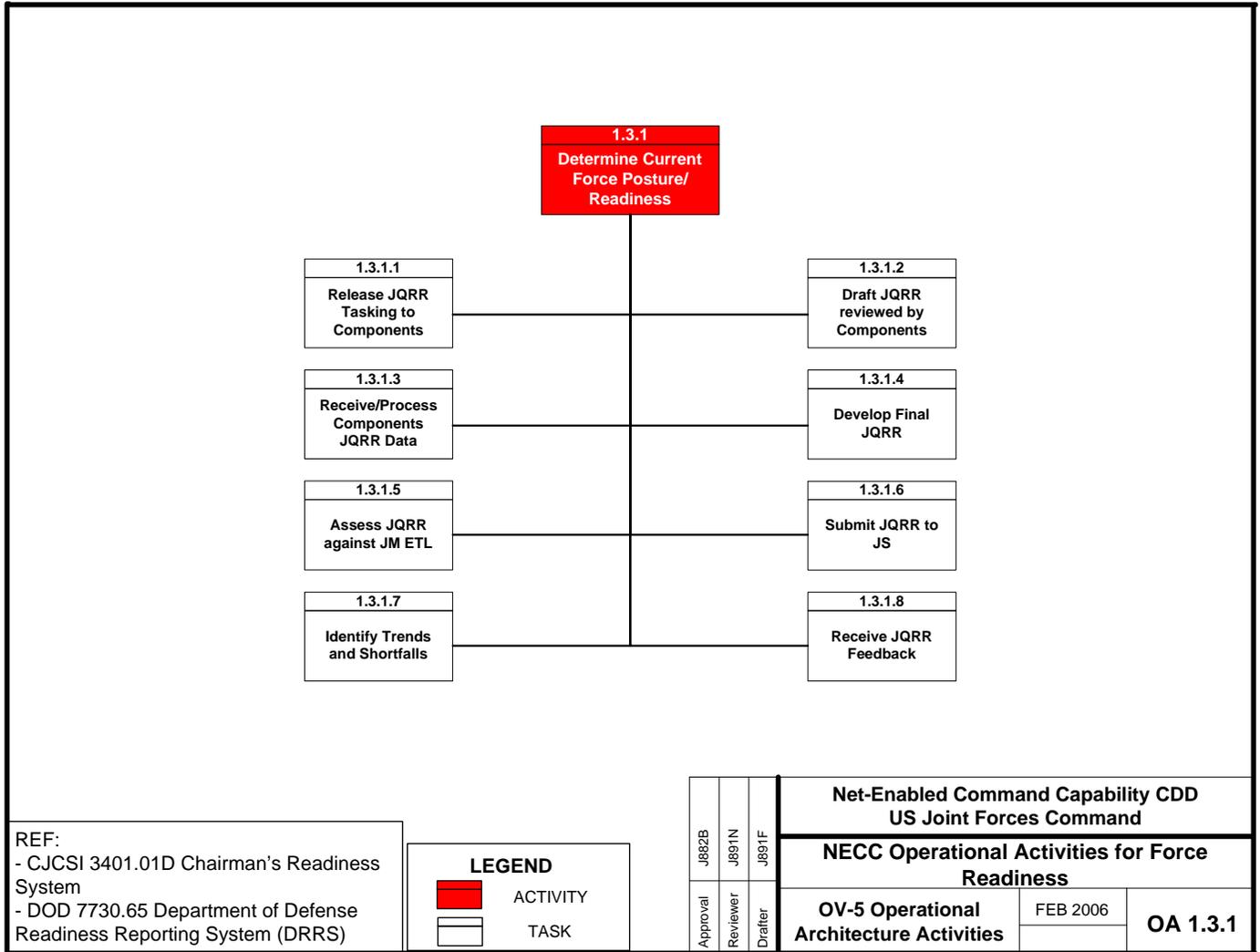
Figure A-4-4-1 is the operational activity model base map describing the operations of Force Readiness examining current force posture and readiness status at the strategic level.



**Figure A-4-4-1. OV-5: Force Readiness**

**OV-5 Operational Activity Model for Force Readiness Activity 1.3.1**

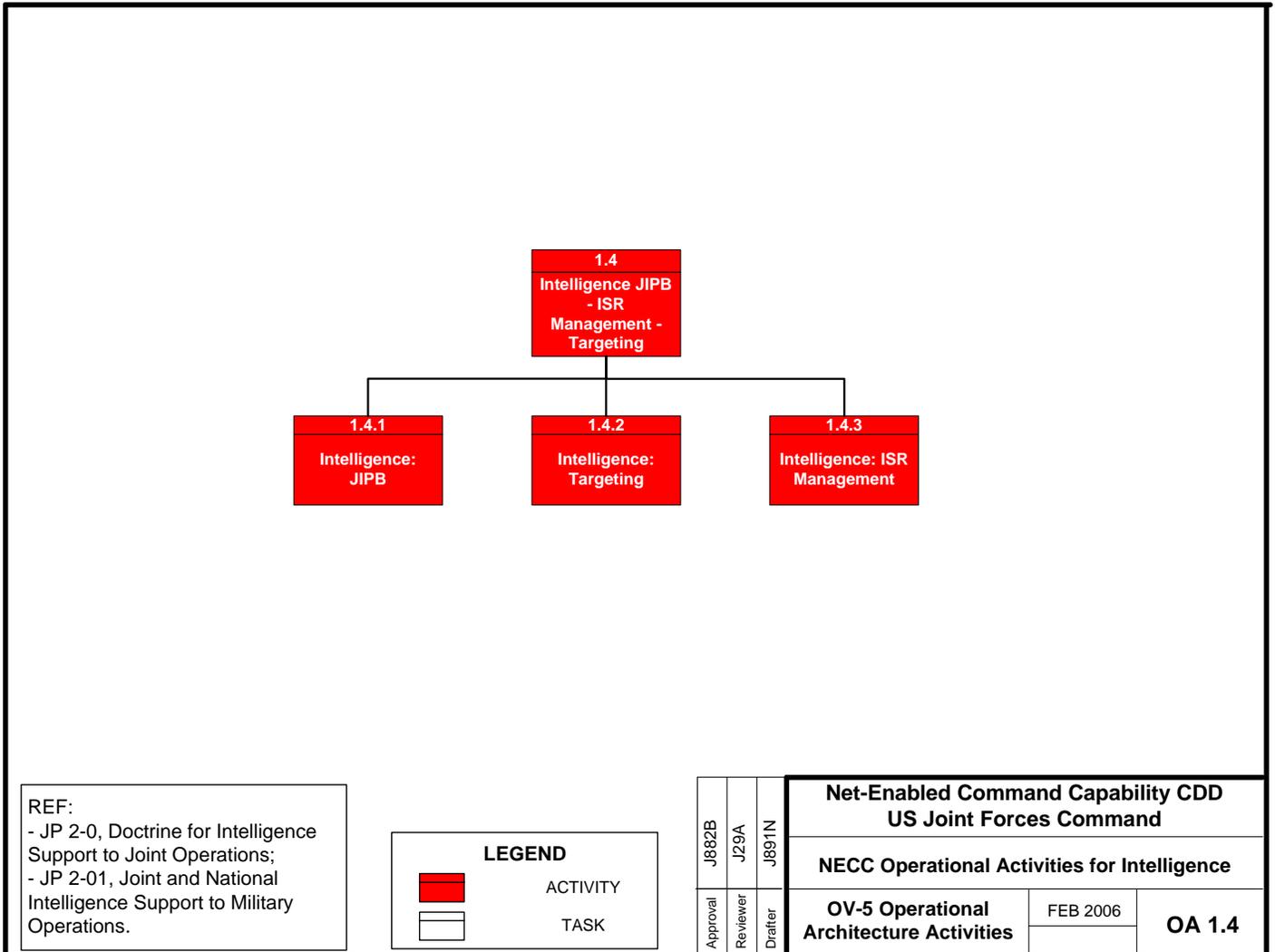
Figure A-4-4-2 shows the operational activities for Force Readiness to Determine Current Force Posture/Readiness performed at a CCDR level to assess and evaluate Force Readiness against their Joint Mission-Essential Tasks (JMETs).



**Figure A-4-4-2. OV-5: Force Readiness Activity 1.3.1**

**OV-5 Operational Activity Model for Intelligence**

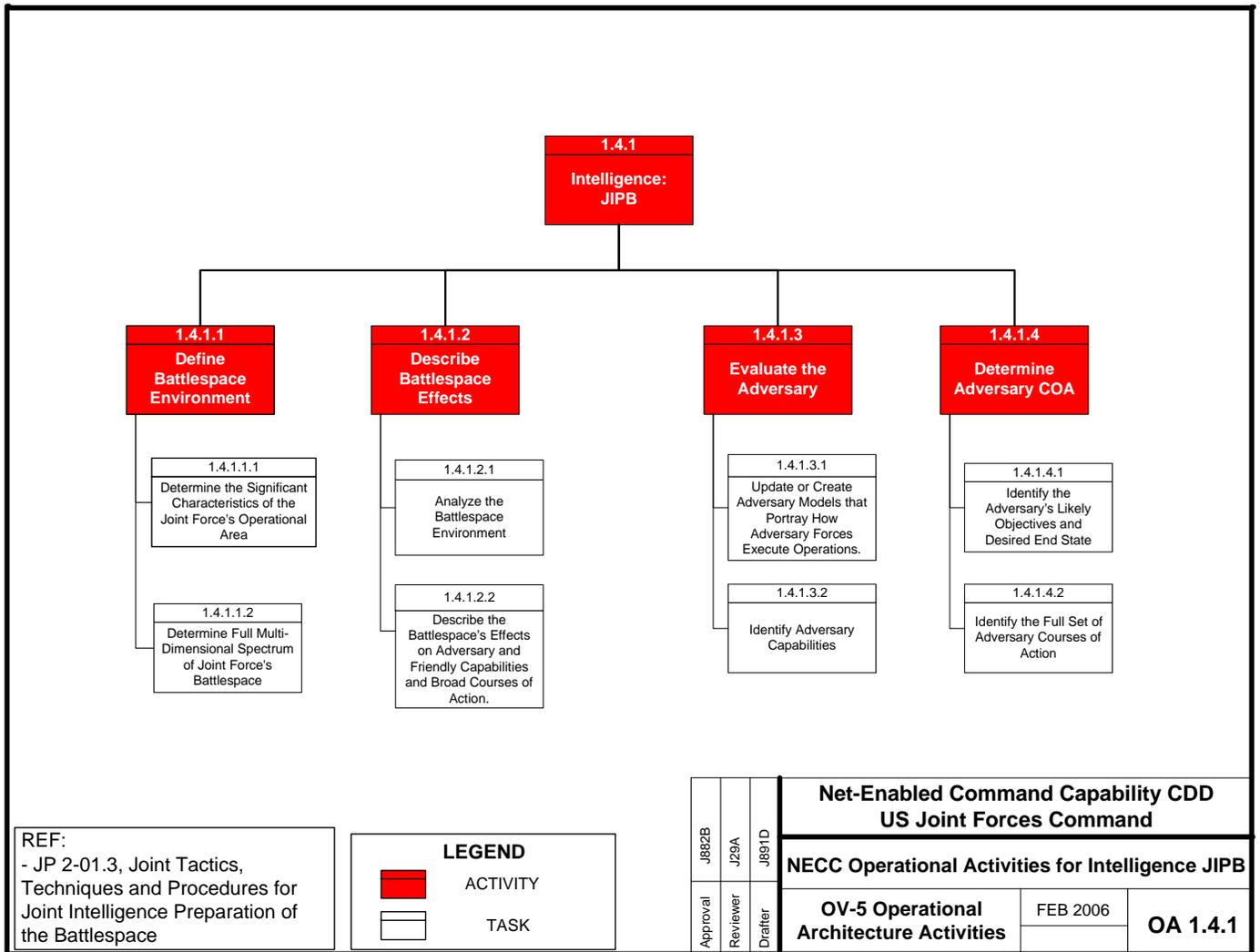
Figure A-4-5 is the high level operational activity model base map describing the operations of Intelligence - Joint IPB, ISR Management and Targeting. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-5. OV-5: Intelligence**

**OV-5 Operational Activity Model for Intelligence - JIPB**

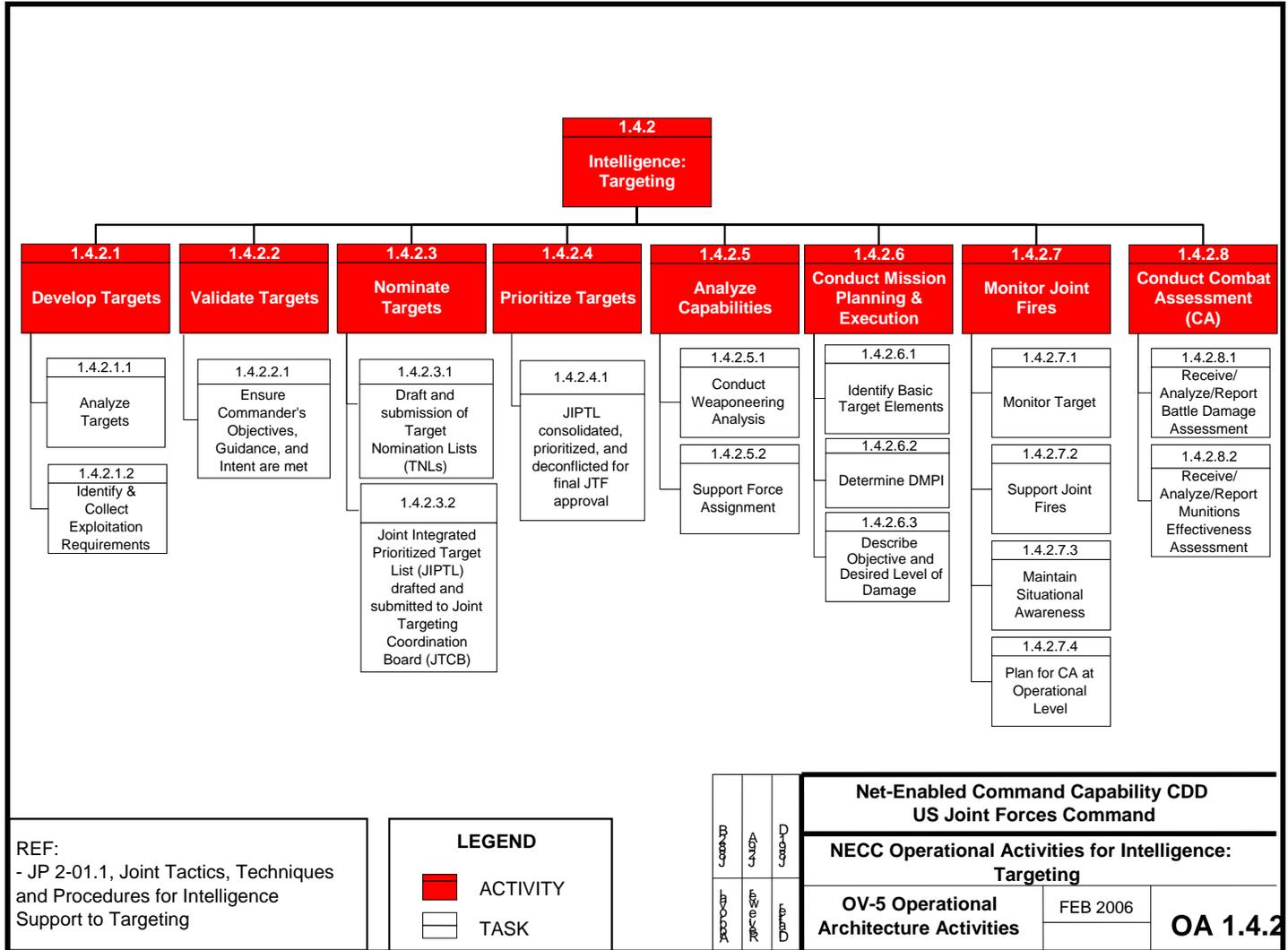
Figure A-4-5-1 is the operational activity model describing the operations of Intelligence - JIPB. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level



**Figure A-4-5-1. OV-5: Intelligence - JIPB**

**OV-5 Operational Activity Model for Intelligence - Targeting**

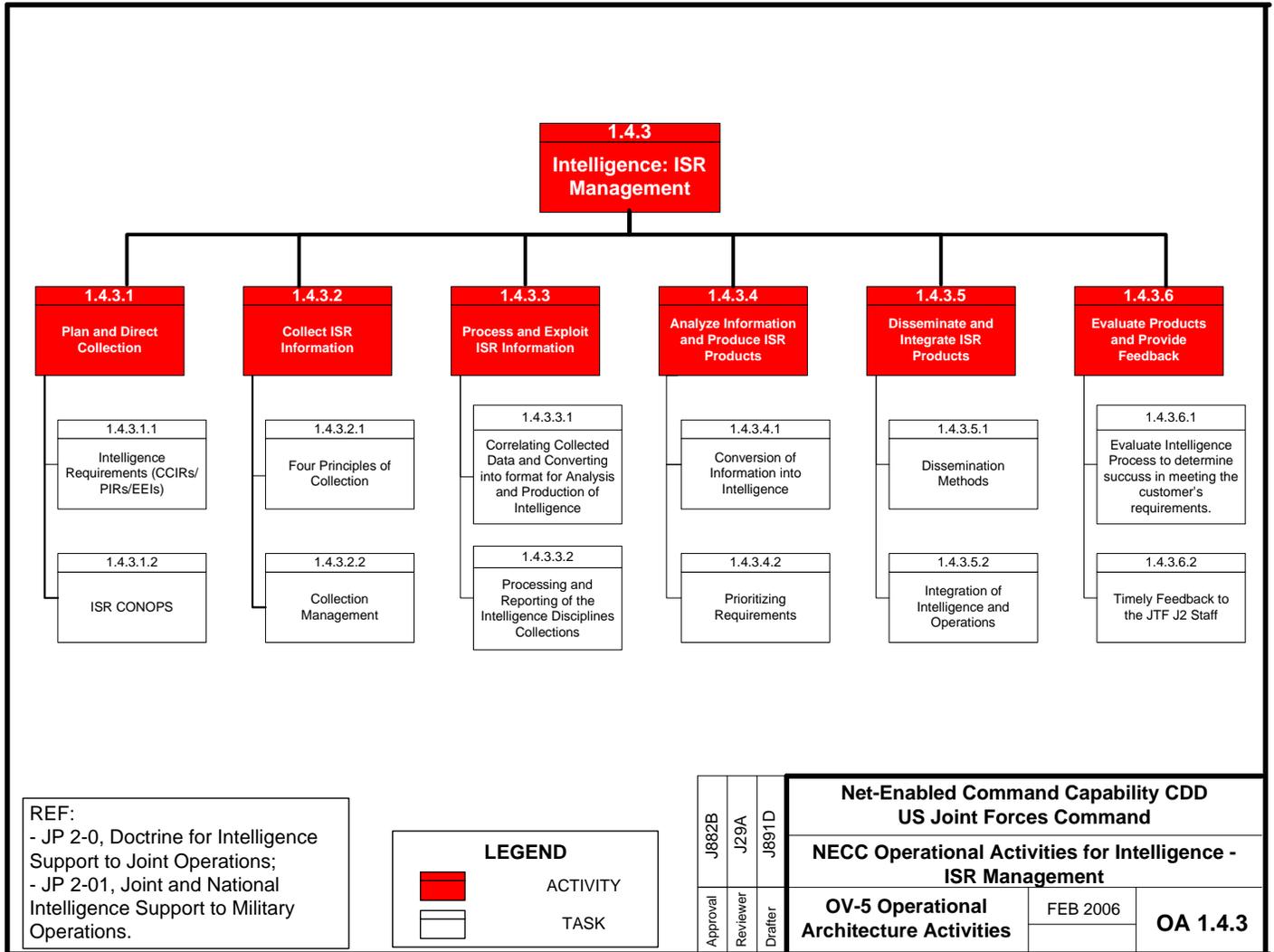
Figure A-4-5-2 is the operational activity model describing the operations of Intelligence - Targeting. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-5-2. OV-5: Intelligence - Targeting**

**OV-5 Operational Activity Model for Intelligence – ISR Management**

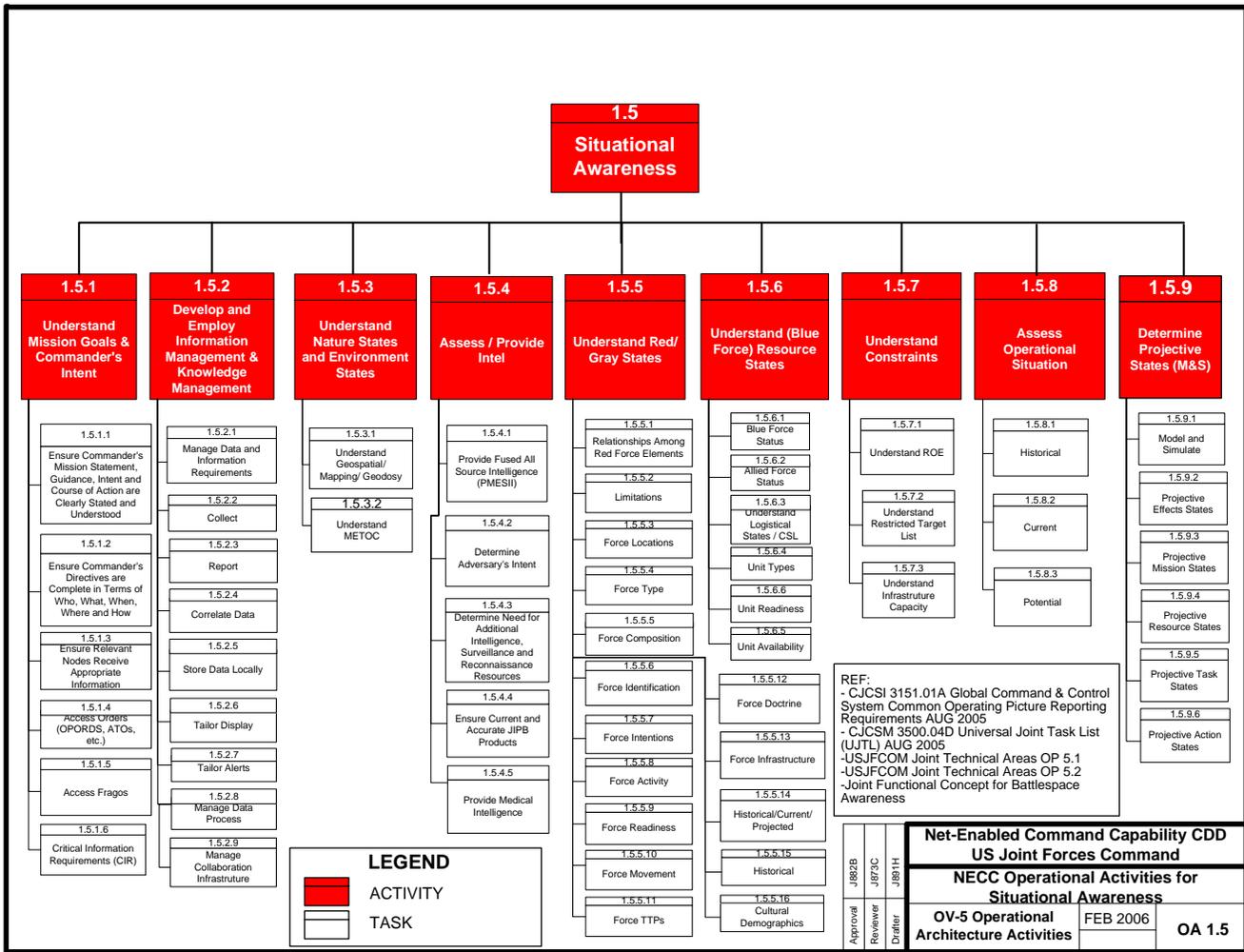
Figure A-4-5-3 is the operational activity model describing the operations of Intelligence – ISR Management. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-5-3. OV-5: Intelligence – ISR Management**

**OV-5 Operational Activity Model for Situational Awareness**

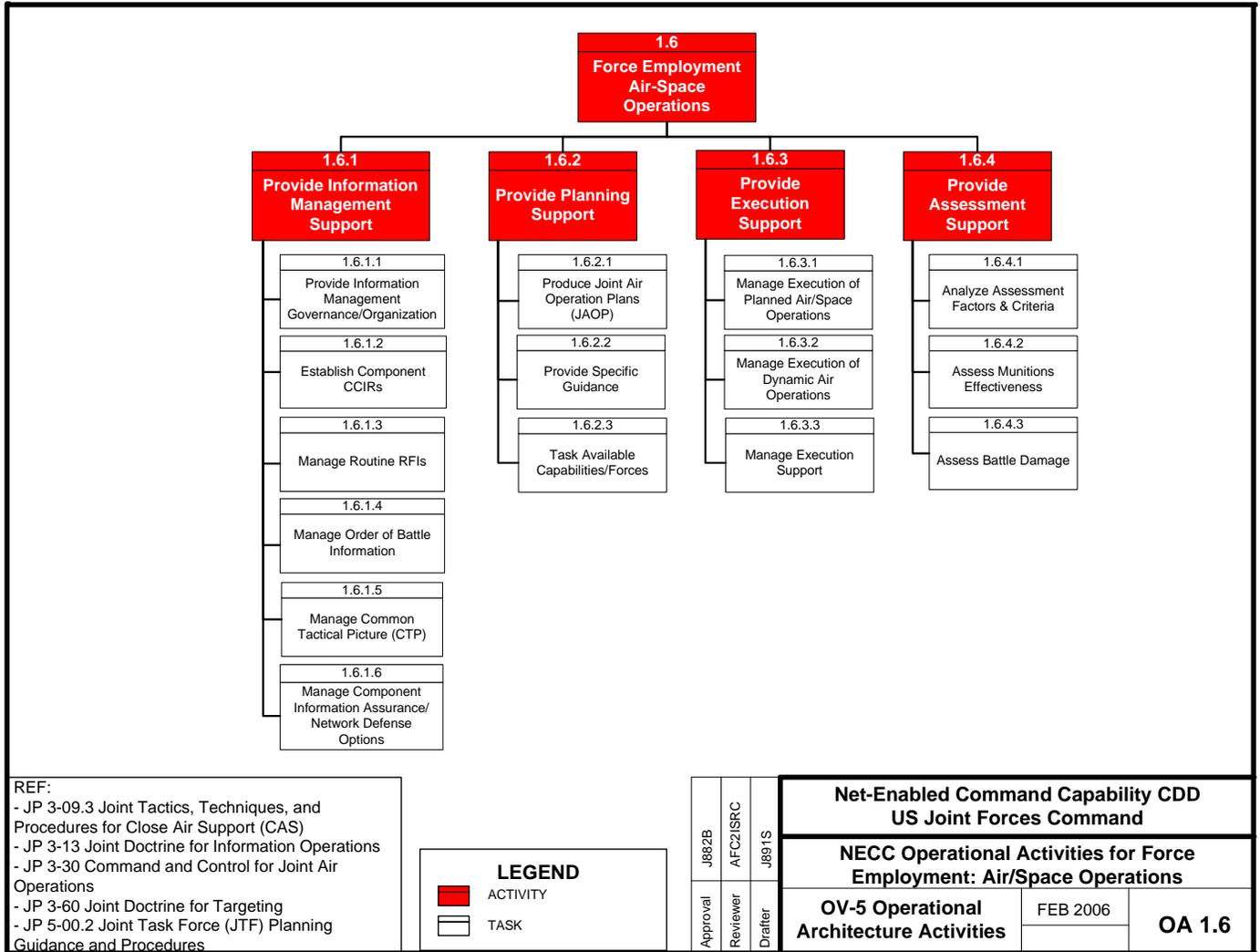
Figure A-4-6 is the operational activity model describing the operations of Situational Awareness. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-6. OV-5: Situational Awareness**

**OV-5 Operational Activity Model for Force Employment – Air/Space Operations**

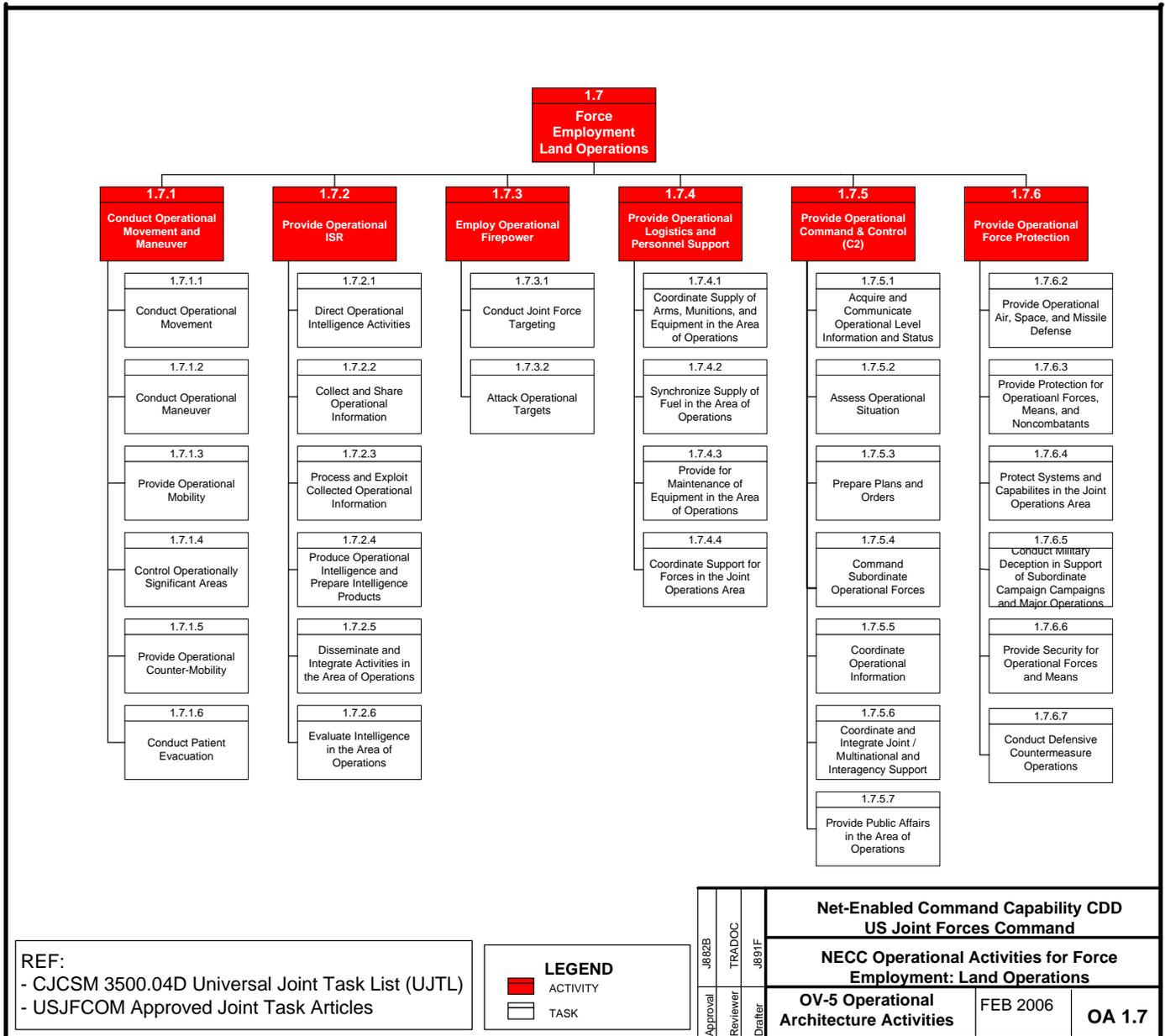
Figure A-4-7 is the operational activity model describing the operations of Force Employment – Air/Space Operations. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-7. OV-5: Force Employment – Air/Space Operations**

**OV-5 Operational Activity Model for Force Employment – Land Operations**

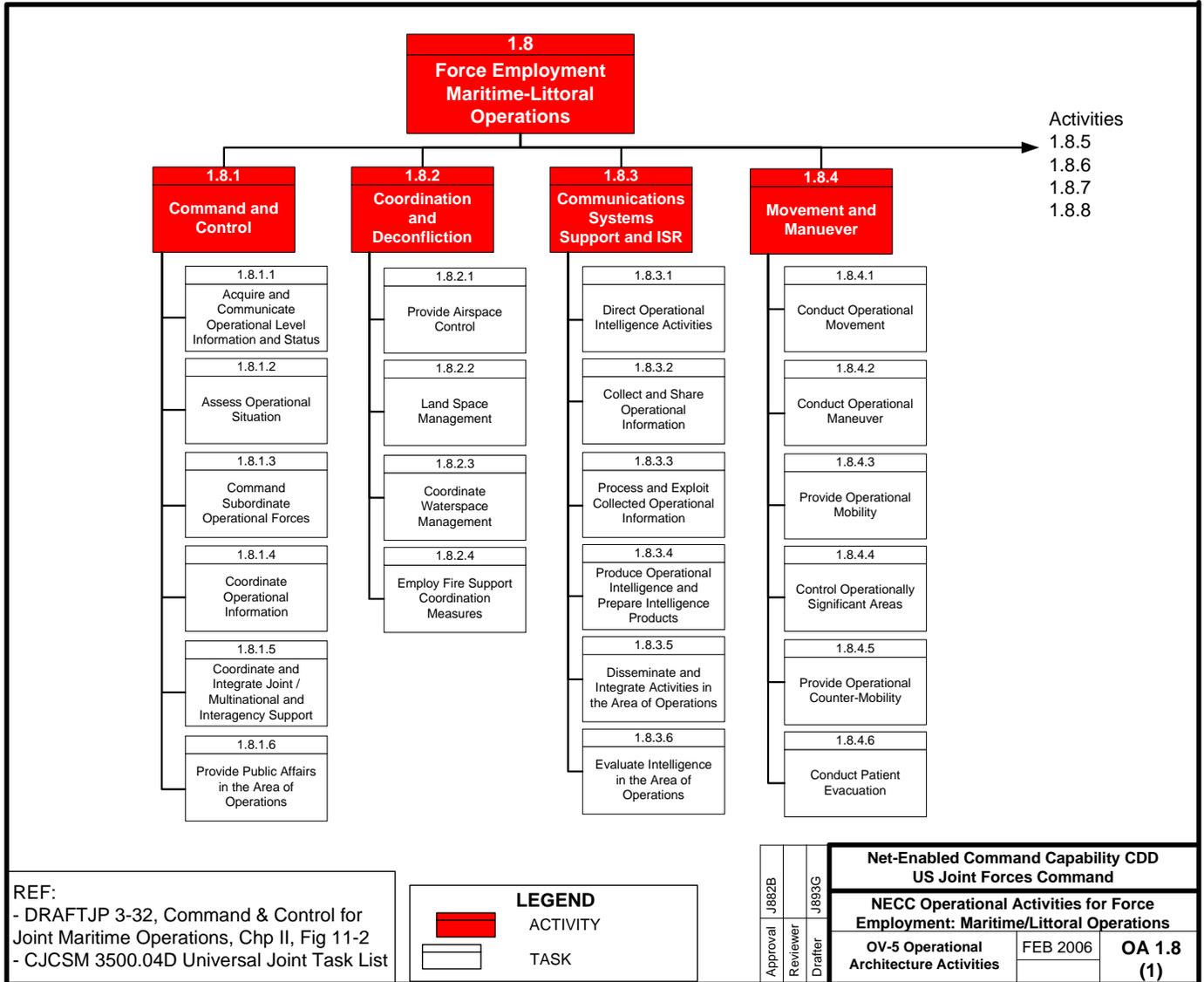
Figure A-4-8 is the operational activity model describing the operations of Force Employment – Land Operations. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-8. OV-5: Force Employment – Land Operations**

**OV-5 Operational Activity Model for Force Employment – Maritime/Littoral Operations**

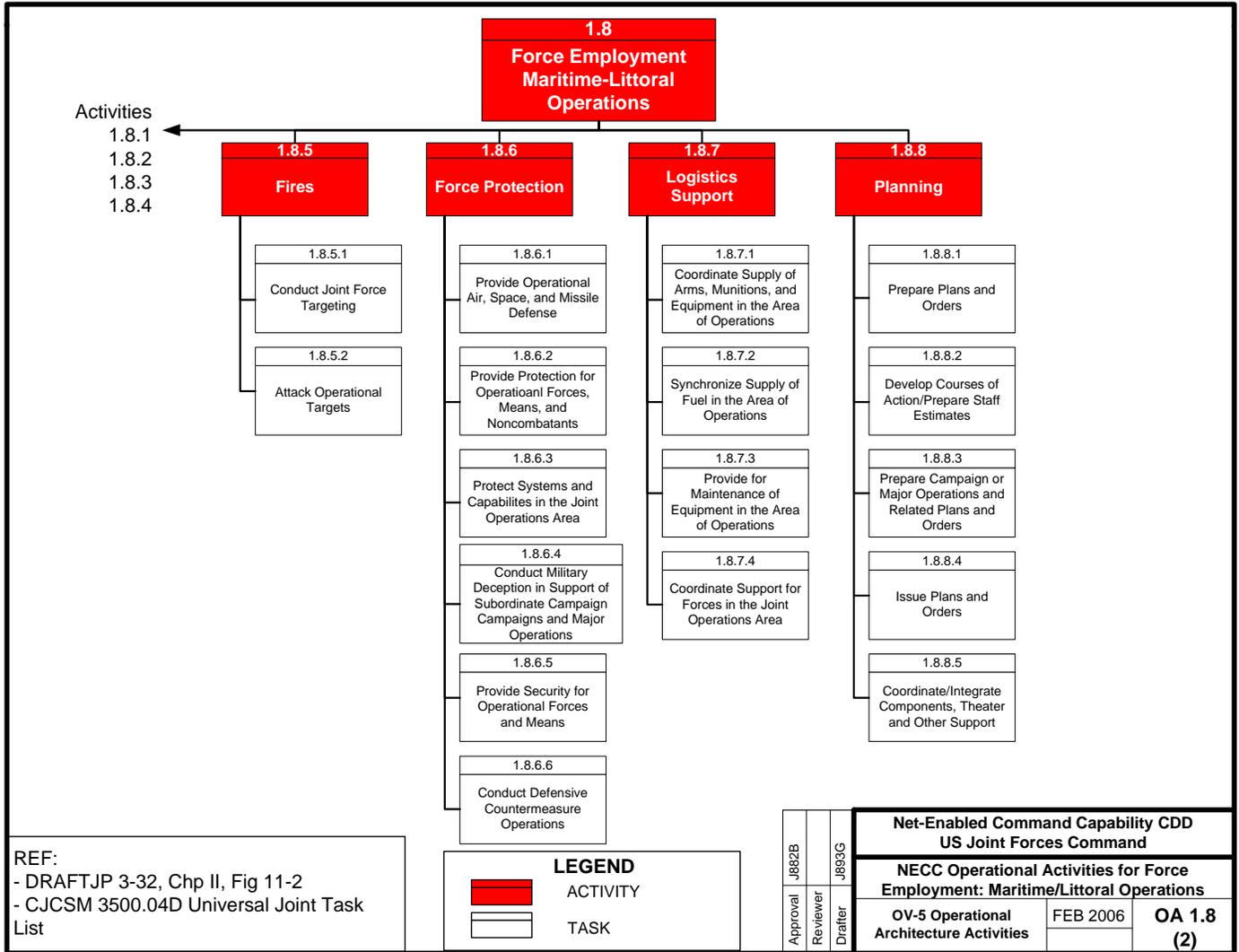
Figure A-4-9-1 depicts the first four activities of the operational activity model describing the operations of Force Employment – Maritime/Littoral Operations. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-9-1. OV-5: Force Employment – Maritime/Littoral Operations (Part I)**

**OV-5 Operational Activity Model for Force Employment – Maritime/Littoral Operations**

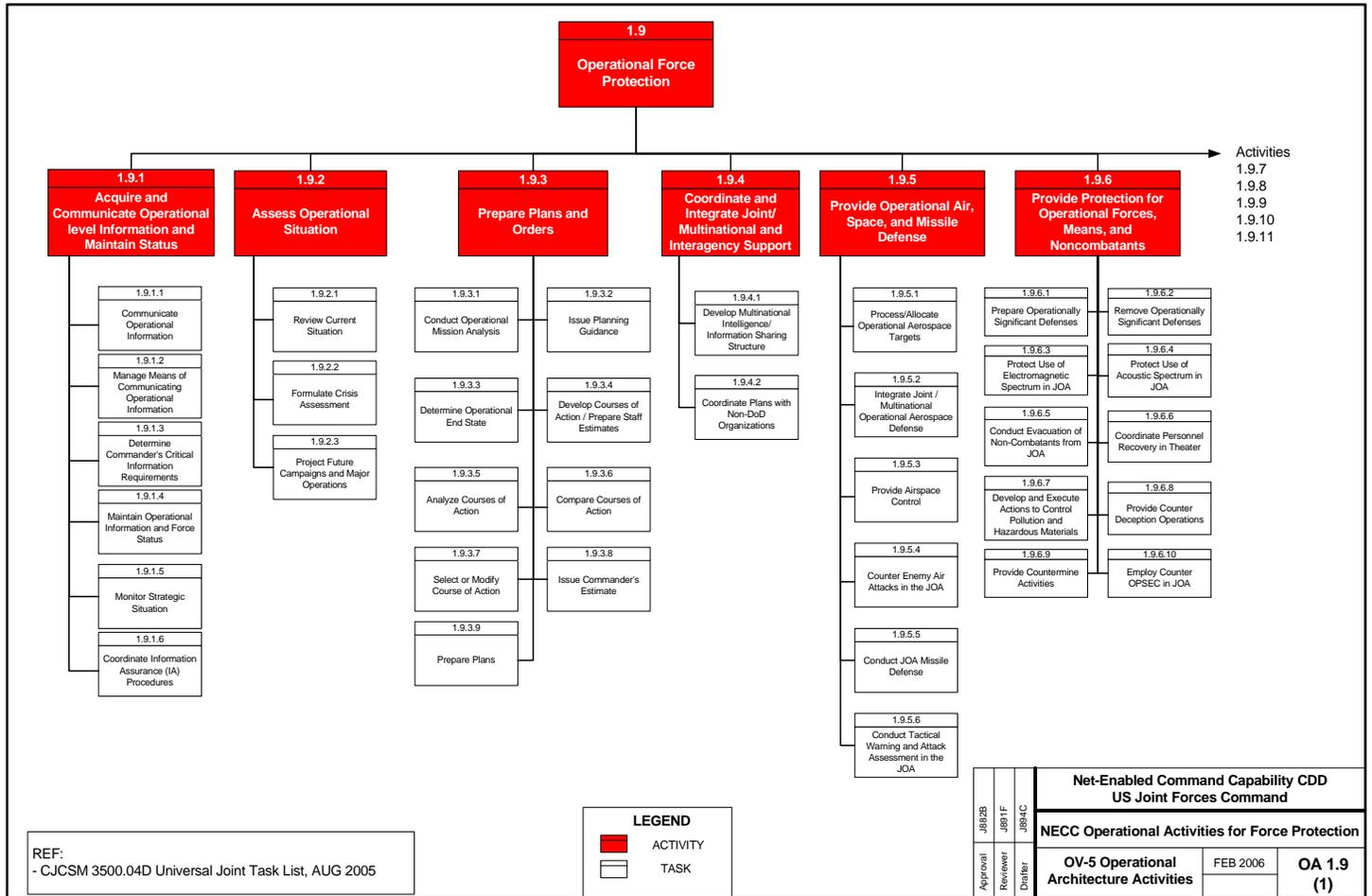
Figure A-4-9-2 depicts the final four activities of the operational activity model describing the operations of Force Employment – Maritime/Littoral Operations. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-9-2. OV-5: Force Employment – Maritime/Littoral Operations (Part II)**

**OV-5 Operational Activity Model for Force Protection**

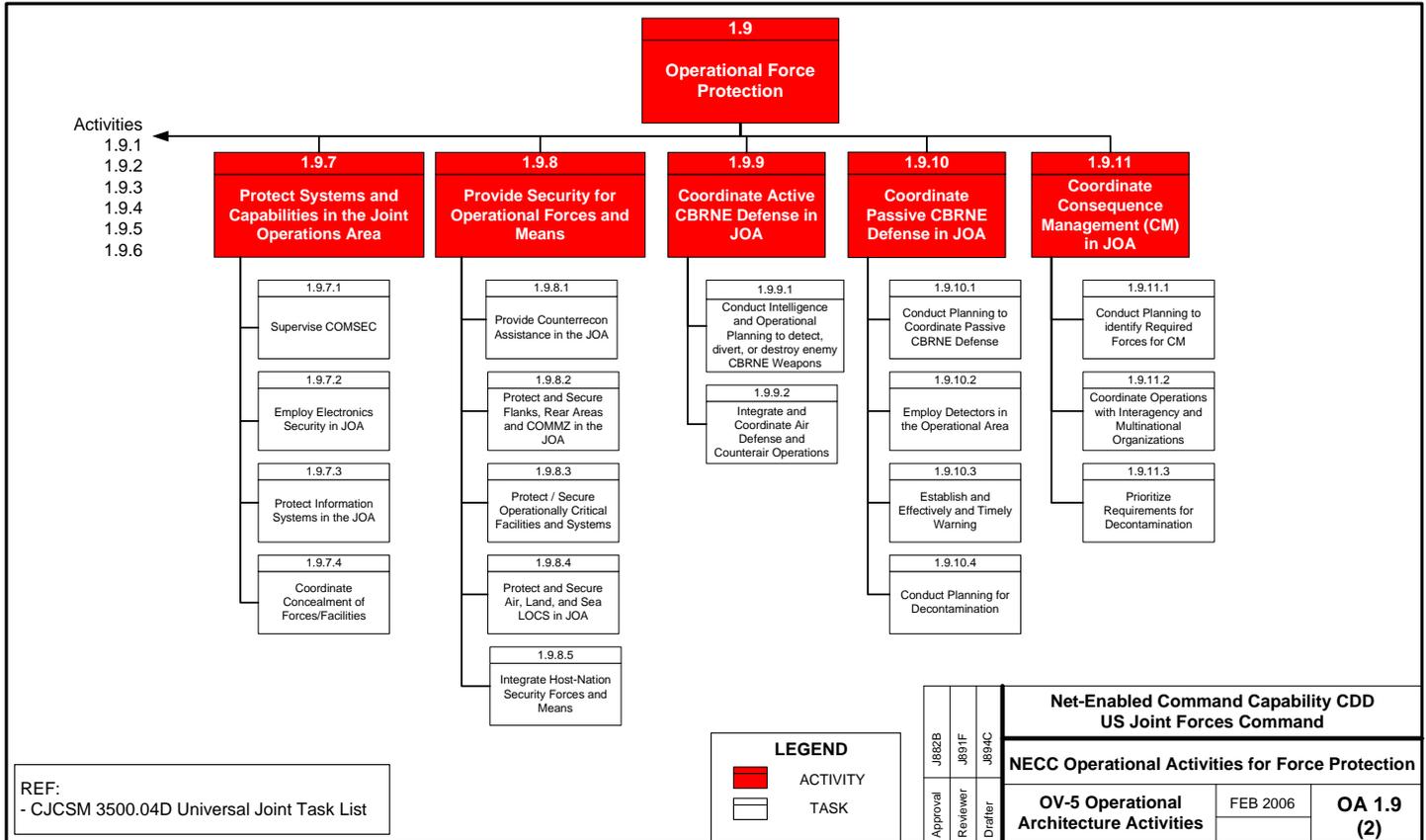
Figure A-4-10-1 depicts the first six activities of the operational activity model describing the operations of Force Protection. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-10-1. OV-5: Force Protection (Part I)**

**OV-5 Operational Activity Model for Force Protection**

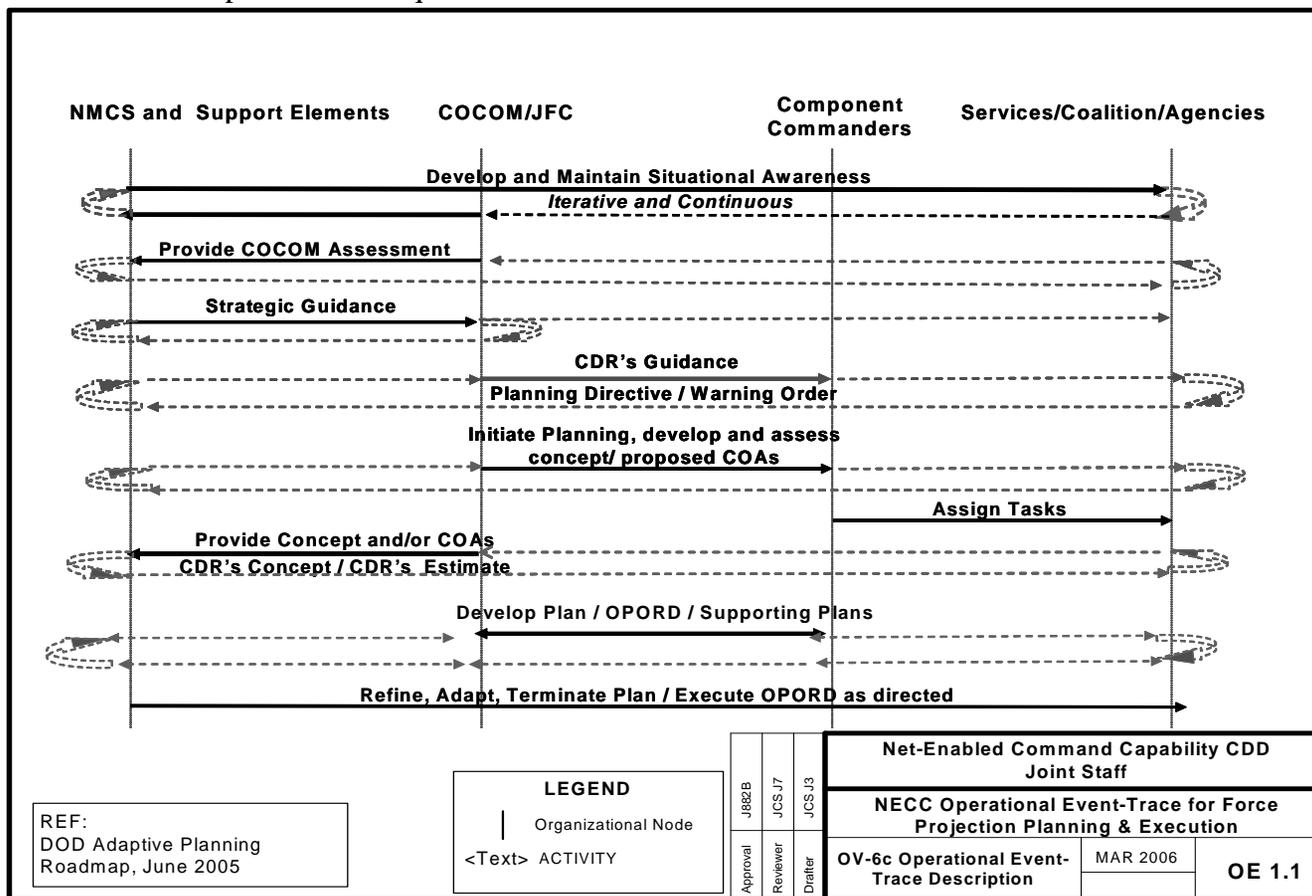
Figure A-4-10-2 depicts the final five activities of the operational activity model describing the operations of Force Protection. It is intended to describe applicable activities supported by NECC for leadership at the Joint Force Commander level.



**Figure A-4-10-2. OV-5: Force Protection (Part II)**

**OV-6c Operational Event - Trace Description for Force Projection : Planning and Execution**

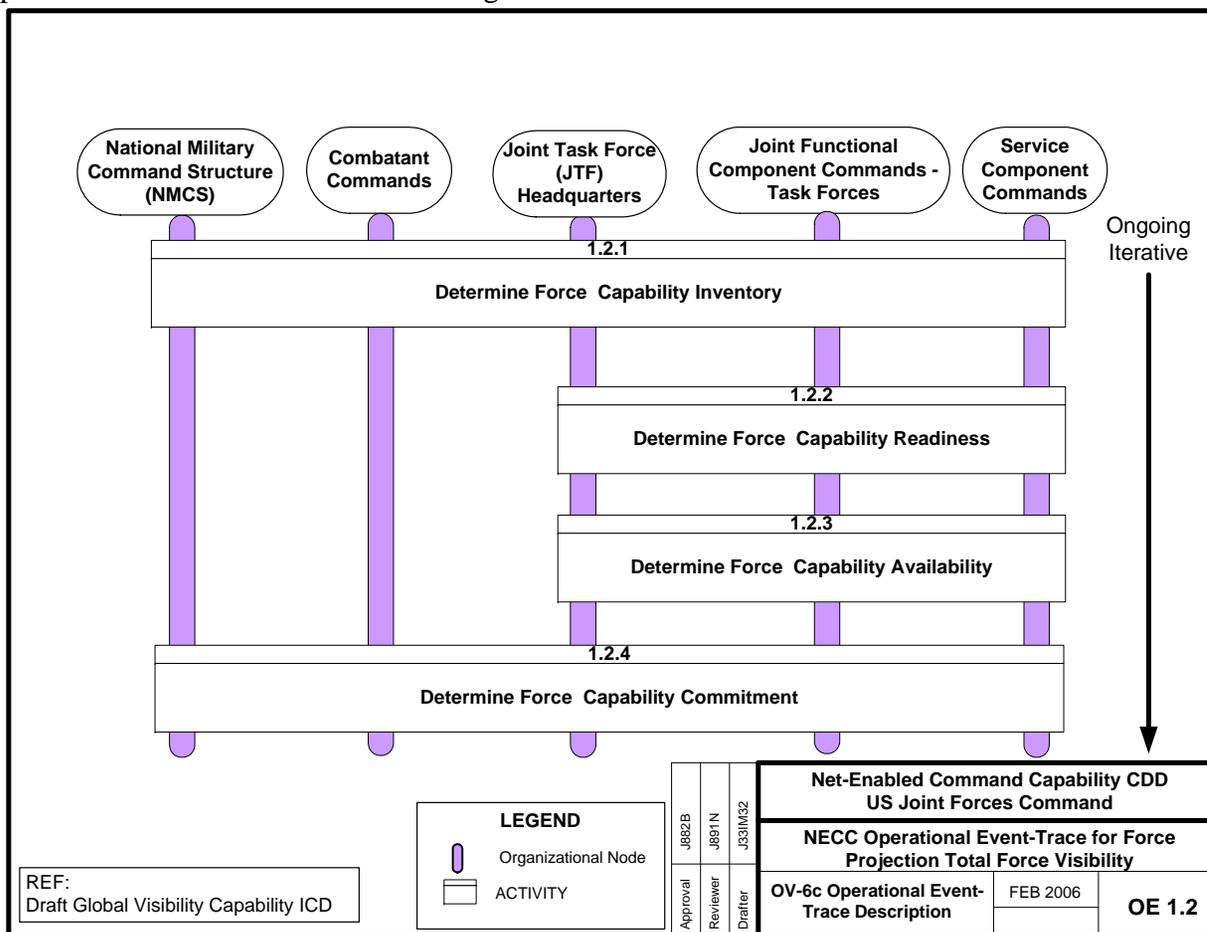
Figure A-5-1 is the operational event-trace description for process elements supporting Planning and Execution. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander. These elements are performed in an interactive and continuous process and require a distributed collaborative environment.



**Figure A-5-1. OV-6c: Force Projection –Planning and Execution**

**OV-6c Operational Event - Trace Description for Force Projection : Total Force Visibility**

Figure A-5-2 is the operational event-trace description for Force Projection - Total Force Visibility. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.



**Figure A-5-2. OV-6c: Force Projection – Total Force Visibility**

**OV-6c Operational Event - Trace Description for Force Readiness**

Figure A-5-3 is the operational event-trace description for Force Readiness. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.

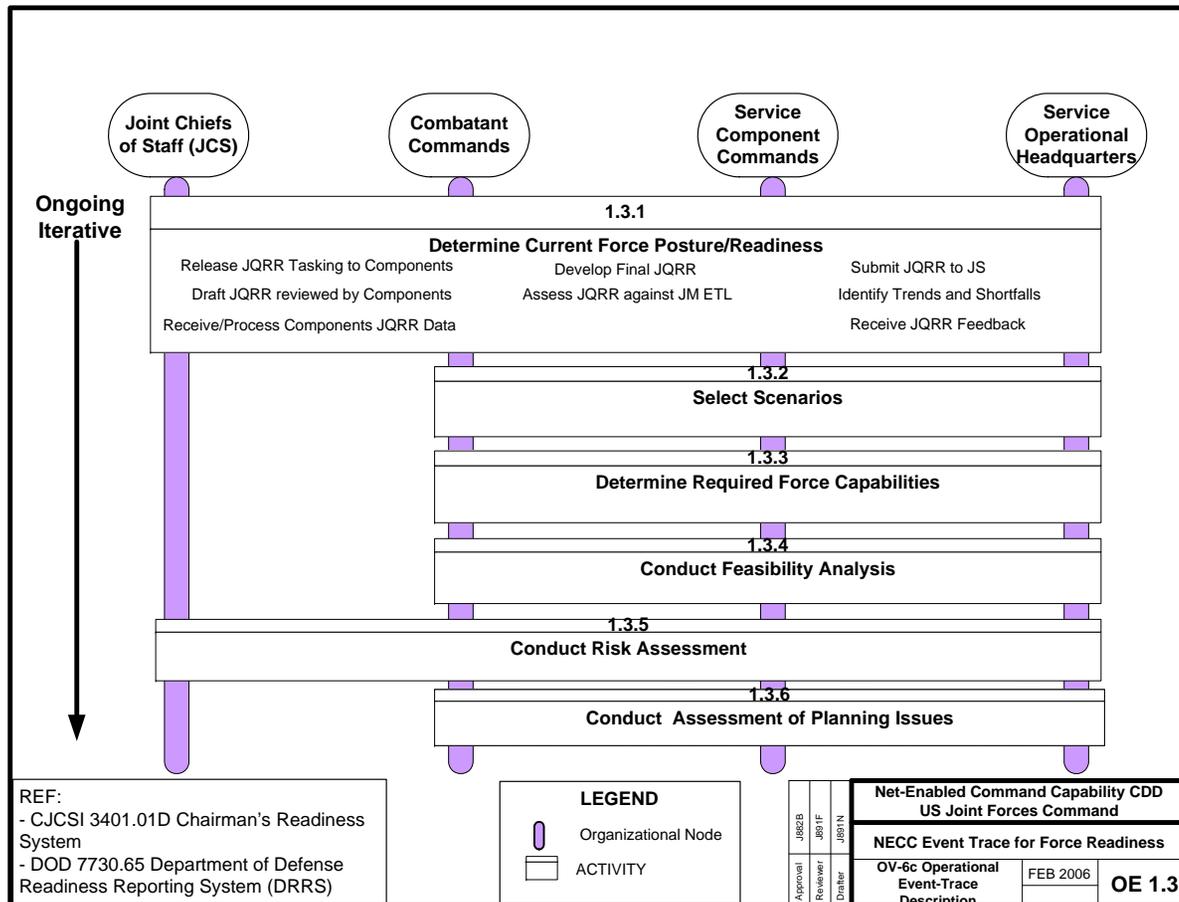
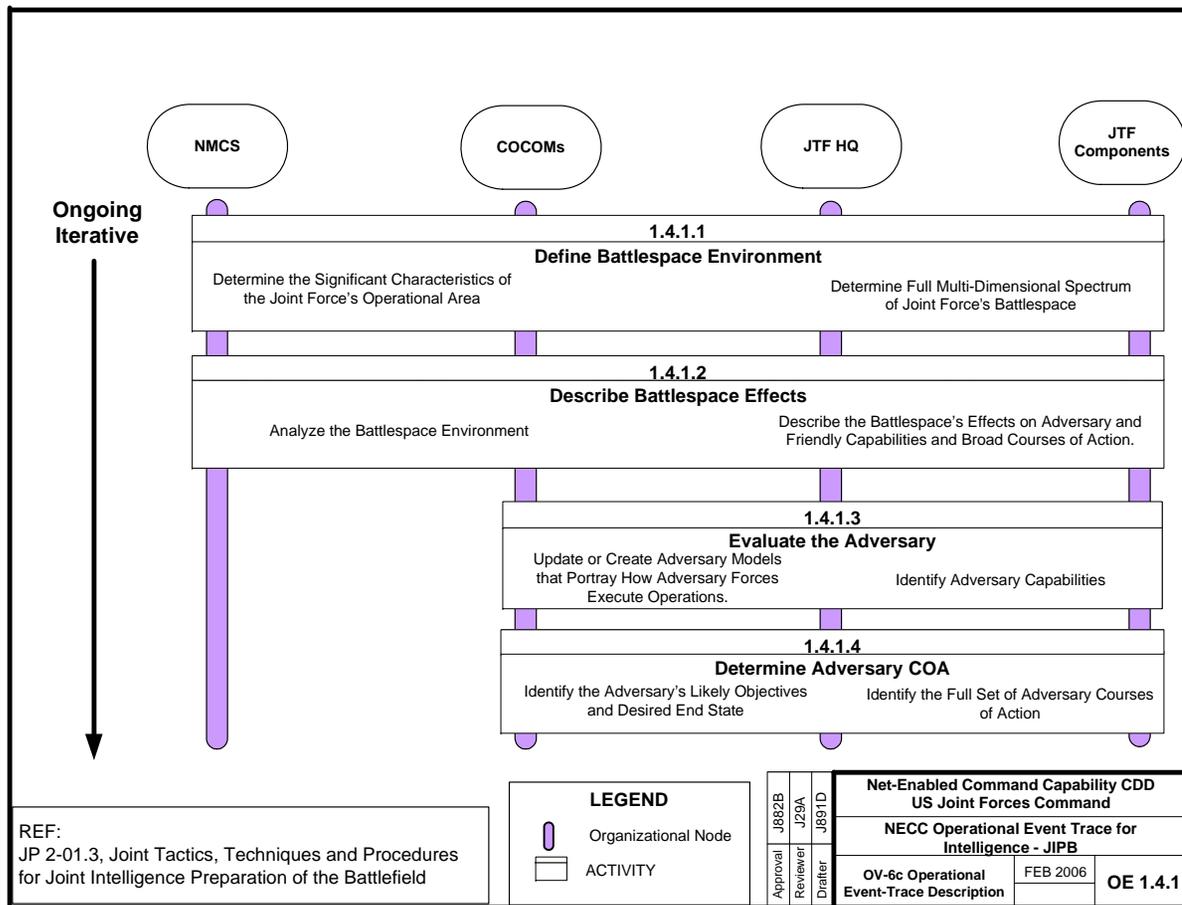


Figure A-5-3. OV-6c: Force Readiness

**OV-6c Operational Event - Trace Description for Intelligence - JIPB**

Figure A-5-4-1 is the operational event-trace description for Intelligence - JIPB. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.



**Figure A-5-4-1. OV-6c: Intelligence – JIPB**

**OV-6c Operational Event - Trace Description for Intelligence - Targeting**

Figure A-5-4-2 is the operational event-trace description for JC2 Intelligence - Targeting. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.

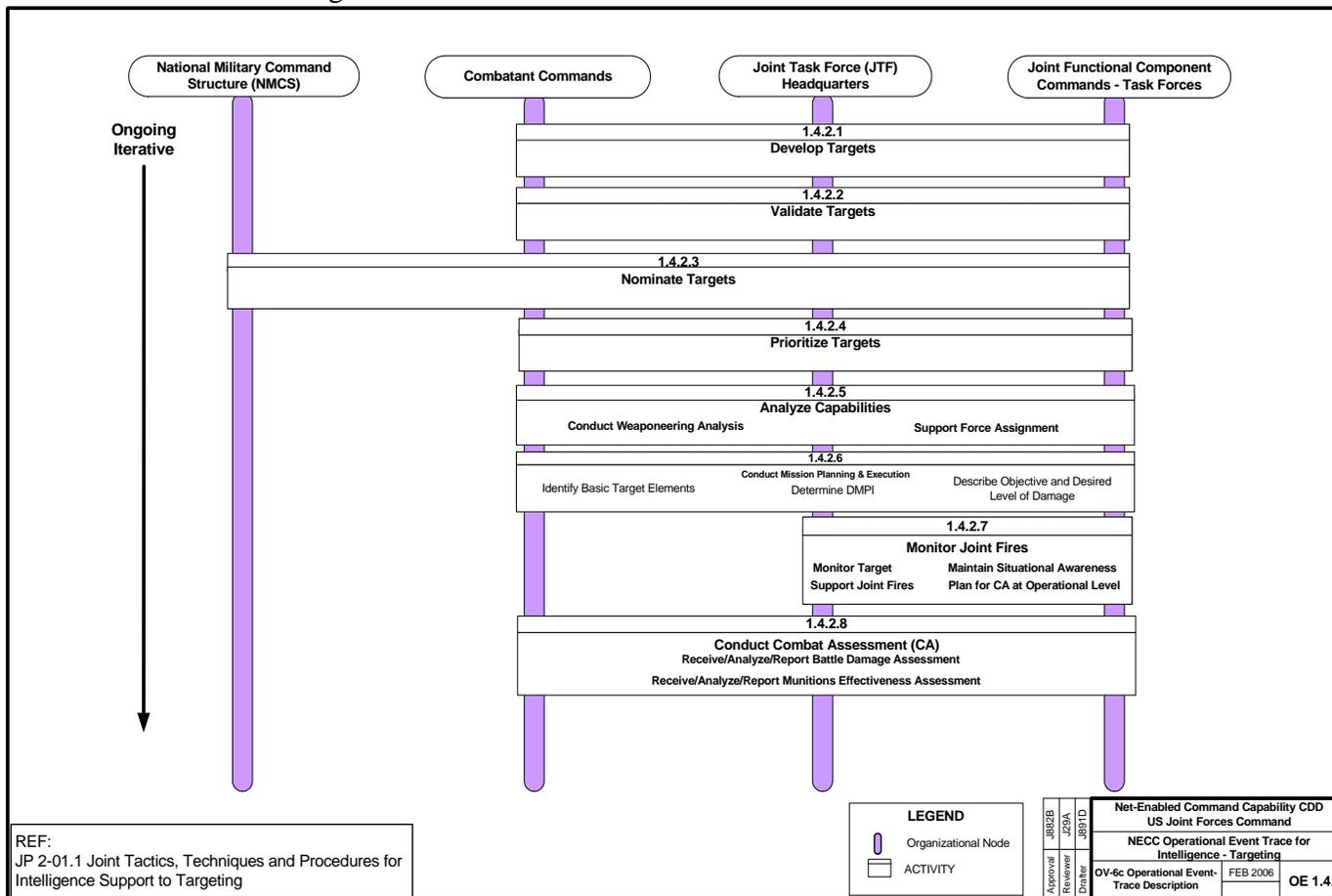
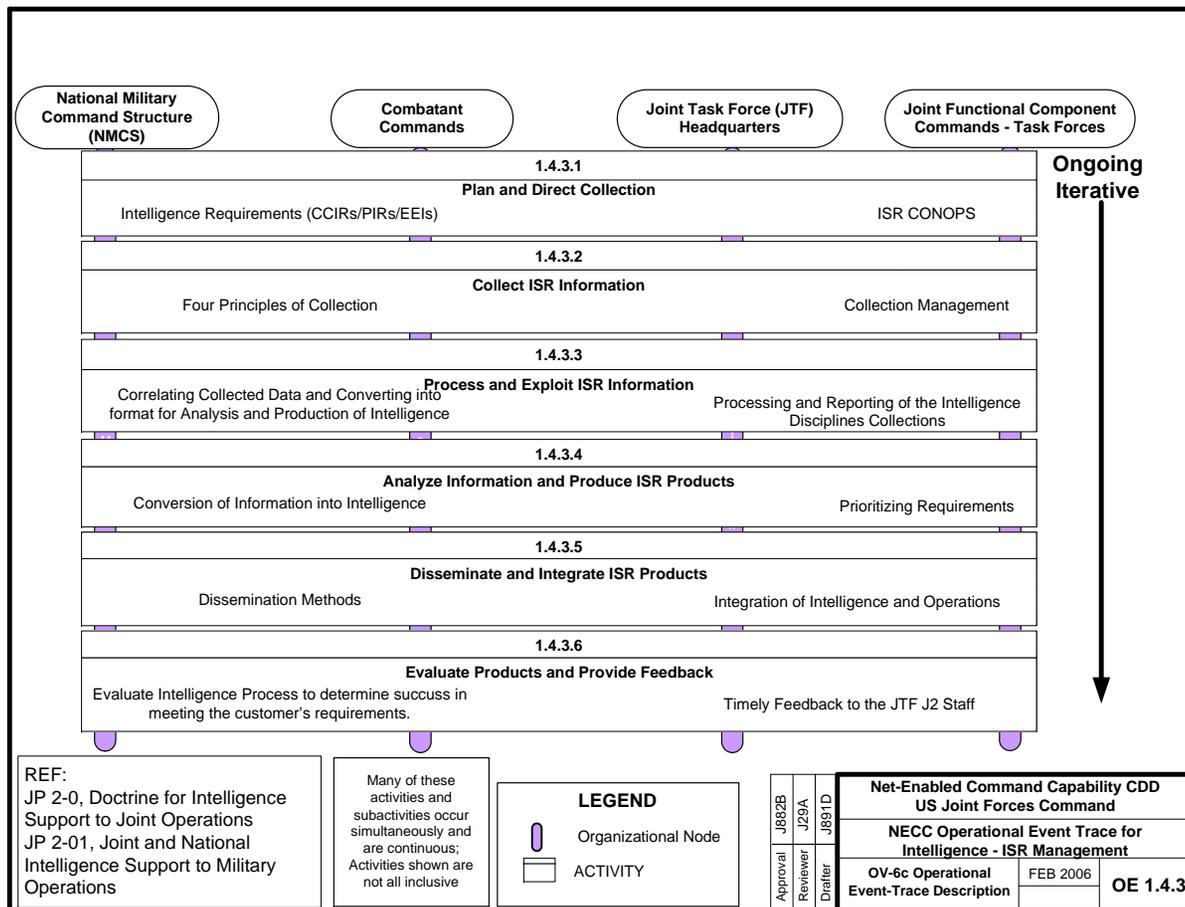


Figure A-5-4-2. OV-6c: Intelligence - Targeting

**OV-6c Operational Event - Trace Description for Intelligence – ISR Management**

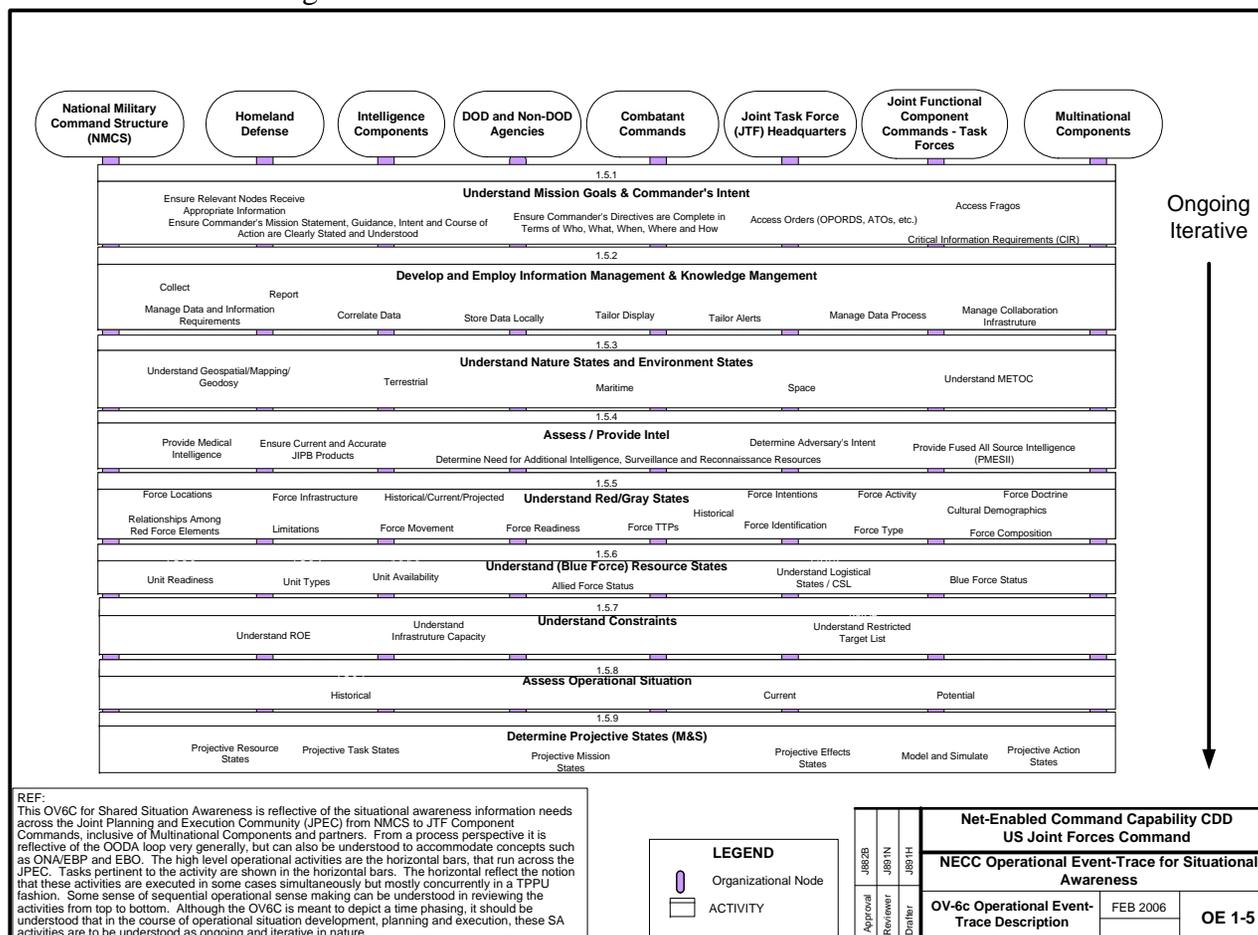
Figure A-5-4-3 is the operational event-trace description for Intelligence – ISR Management. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.



**Figure A-5-4-3. OV-6c: Intelligence - ISR Management**

**OV-6c Operational Event - Trace Description for Situational Awareness**

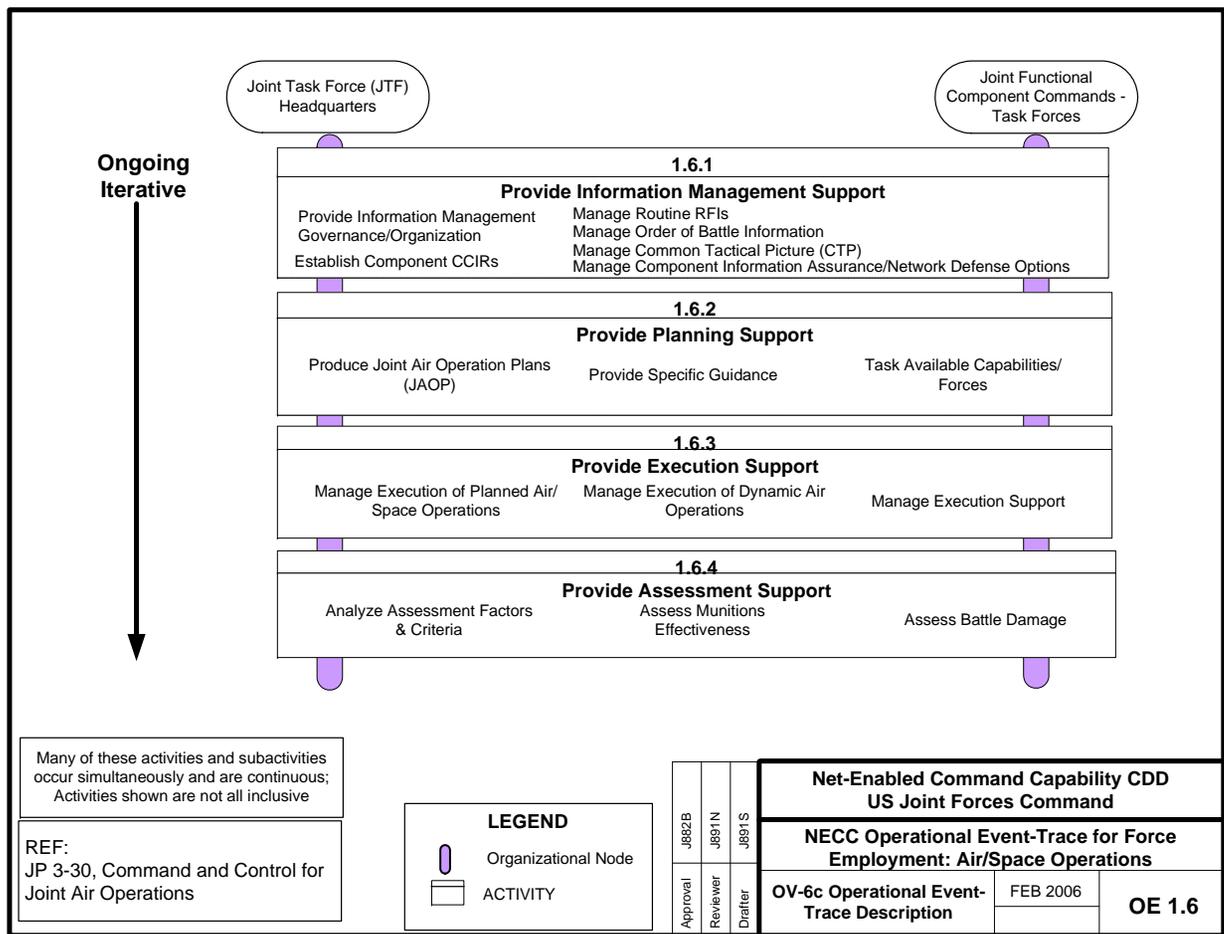
Figure A-5-5 is the operational event-trace description for Situational - Awareness. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.



**Figure A-5-5. OV-6c: Situational Awareness**

**OV-6c Operational Event - Trace Description for Force Employment – Air/Space Operations**

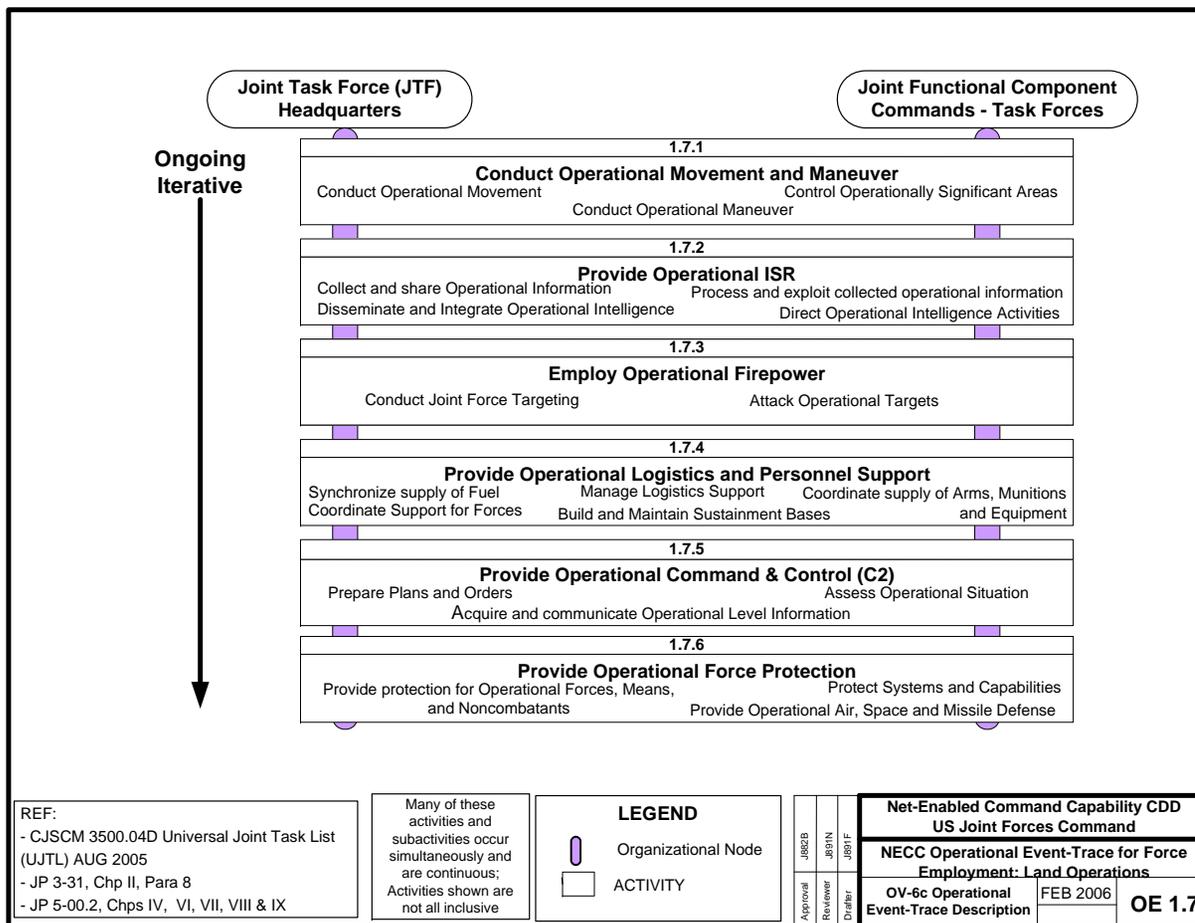
Figure A-5-6 is the operational event-trace description for Force Employment – Air/Space Operations. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.



**Figure A-5-6. OV-6c: Force Employment - Air/Space Operations**

**OV-6c Operational Event - Trace Description for Force Employment – Land Operations**

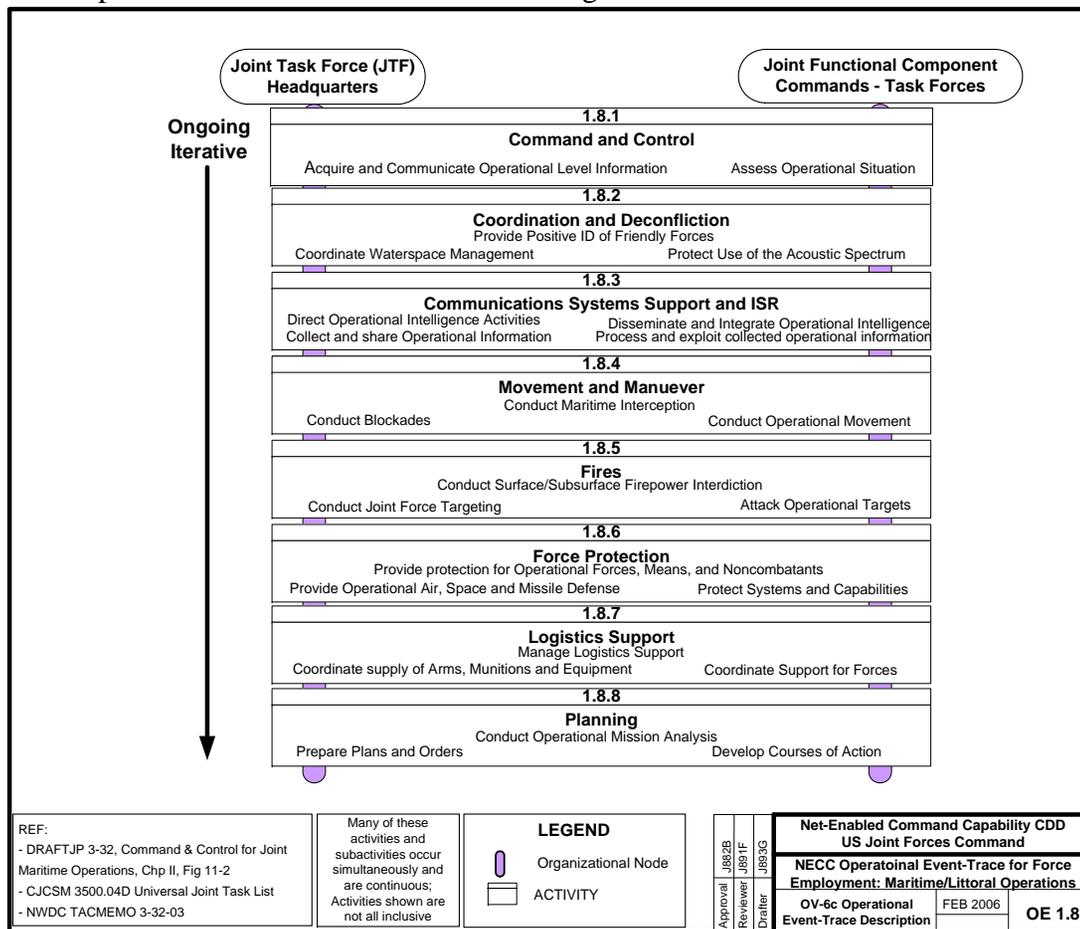
Figure A-5-7 is the operational event-trace description for Force Employment – Land Operations. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.



**Figure A-5-7. OV-6c: Force Employment – Land Operations**

**OV-6c Operational Event - Trace Description for Force Employment – Maritime/Littoral Operations**

Figure A-5-8 is the operational event-trace description for Force Employment – Maritime/Littoral Operations. It displays the interactions between the capabilities and measurable metrics designed for the Joint Force Commander.



**Figure A-5-8. OV-6c: Force Employment – Maritime/Littoral Operations**



**SV-1 Systems Interface Description**

Figure A-6-1 is the top-level NECC hardware and software architecture (NECC Systems Interface Description SV-1). It depicts three different types of system nodes (fixed, transportable, and mobile) and the systems resident at these nodes.

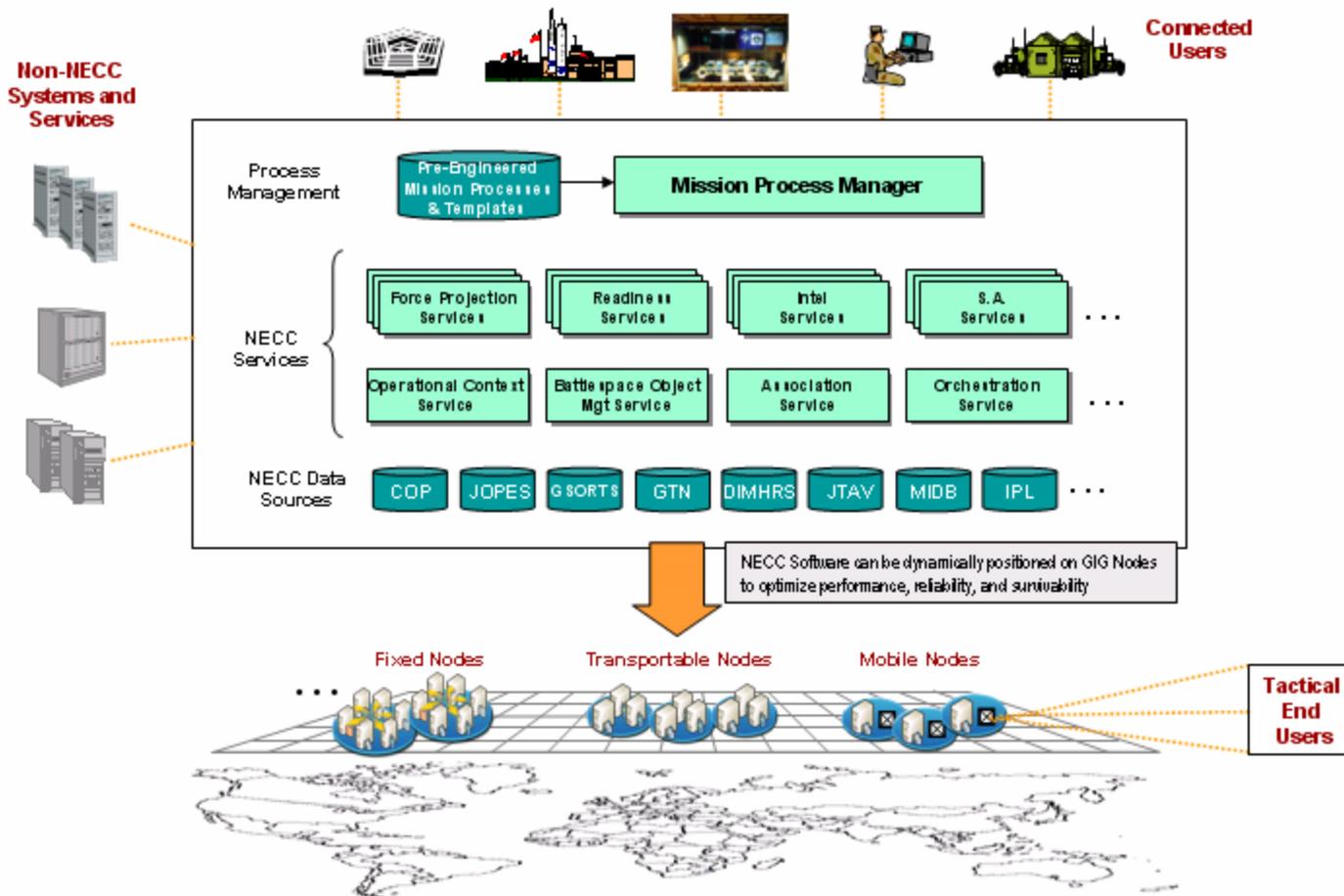


Figure A-6-1. NECC Systems Interface Description (top-level SV-1)

**Description of the SV-1 Systems Interface**

Figure A-6-1 shows that:

- NECC consists of software services running on hardware computer servers. Warfighters will use whatever end user devices they already have (e.g., desktop computers, laptops, personal digital assistants) to consume those services.
- The hardware servers will exist in three types of environments:
  - Fixed nodes at facilities with continuously connected high bandwidth network connectivity,
  - Transportable nodes at temporary facilities with continuous connections but lower bandwidth, to which the servers are transported, set up, and broken down as required, and
  - Mobile nodes with intermittent connectivity, in which the servers must operate while on the move and in situations of temporary disconnection from the network
- The hardware and software are both configurable. They can be mixed and matched, and servers can be added and deleted, to optimize performance, reliability, and stability.
- Transportable and mobile nodes may operate in challenging network environments involving disconnected, intermittent and limited IP connectivity as described elsewhere in this CDD, and as a result the NECC design will need to support an approach which fully addresses the implementation necessary to provide the required behavior to the end user.
- NECC is designed to operate on IP networks, and tactical users may require gateways (symbolized by  in Figure A-6-1) to bridge their tactical networks to the IP networks.

In addition to its own services, NECC will interact with other systems and services for data and business logic needed to provide the capabilities specified in this CDD.

Figure A-6-2 is the second-level NECC Systems Interface Description SV-1. It describes in further details NECC services and data services, as well as non-NECC services and Core Enterprise Services that NECC depends on. It also shows that NECC users will consume NECC services through three end-user environments: applications, thin clients, and portal/browsers.

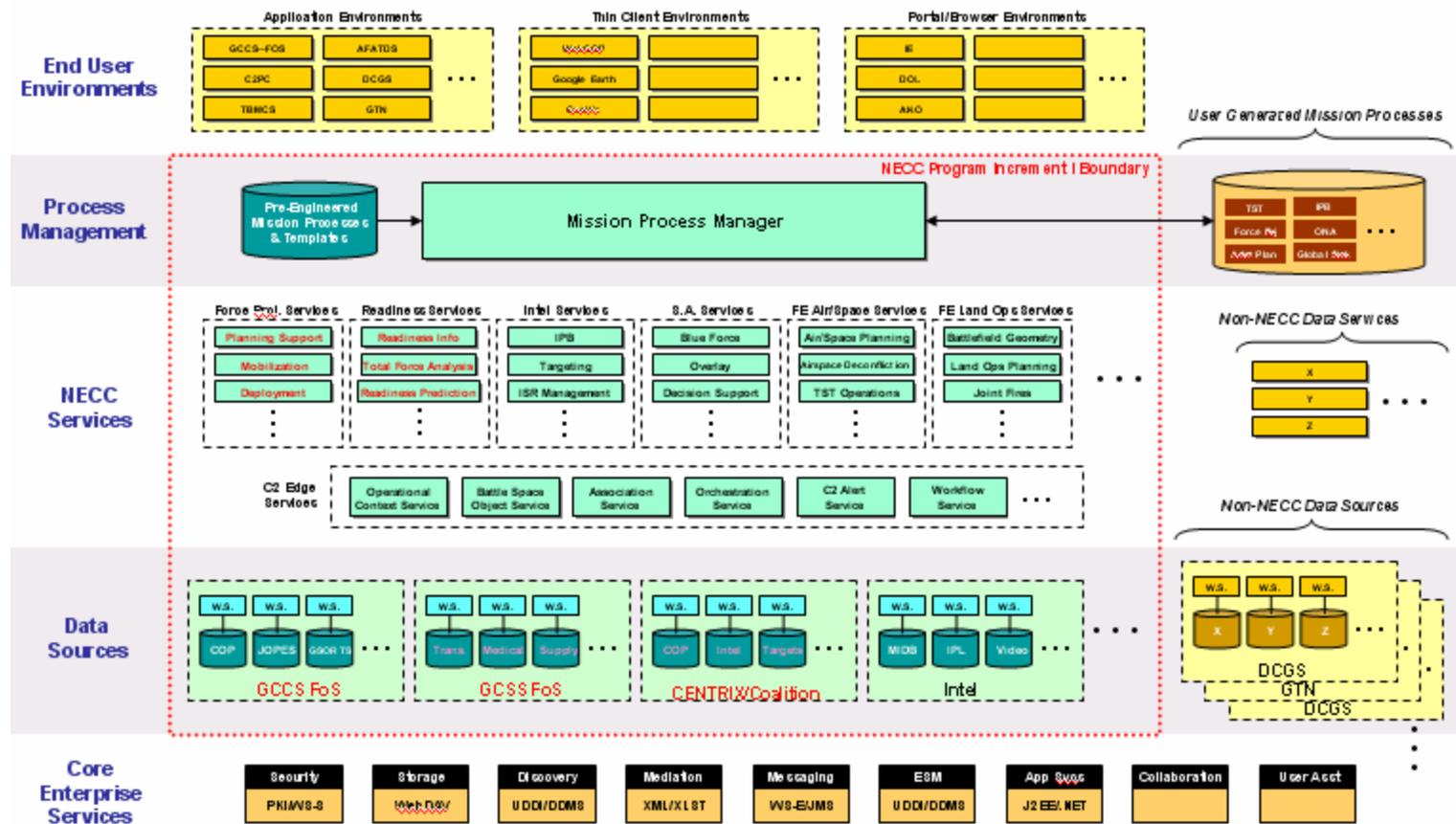


Figure A-6-2. NECC Systems Interface Description (second-level SV-1)

Figure A-6-2 shows the software architecture with a notional programmatic boundary, which separates NECC software products from those of other programs. NECC capabilities may be satisfied not only by products inside the boundary, but also by those outside, on which NECC is therefore dependent. During Increment I, some subset of the end user environment functionality will transition to NECC and reside inside the NECC boundary. The end user environments shown outside the program boundary represent the ones that either have yet to transition or will not transition to NECC.

In addition, the following are key points related to Figure A-6-2:

- NECC will use the core enterprise services provided by the NCES program.
- The distinction between data sources and services is subtle but important. All software services include two fundamental components: 1) data and 2) operations or business logic. Within this model, data sources are types of services, albeit ones with simple or primitive operations such as create, read, update, and delete. Data sources are also services illustrated by the “W.S.” (Web Service) icons in the figure. More complex business operations (e.g., queries, calculations, decision algorithms) are also appropriately considered services, and the C2 common services and MCP-specific services in the picture are in this category. For these kinds of complex services, their data components will often be the data sources with their primitive operations.
- C2 Common Services address C2-specific requirements (e.g., the need to access and/or update Battlespace Objects), and are of common utility across multiple MCPs.
- There is no technical difference between NECC and non-NECC data sources, and between NECC and non-NECC services. The distinction is programmatic.
- The NECC Mission Process Manager supports the design and execution of workflows and orchestration processes. NECC will develop selected "Pre-Engineered Mission Processes" as templates to help other development organizations create workflow and orchestration applications.
- Workflow / Mission Processes and other applications will be designed for multiple end user environments. Although the actual environments may be provided by non-NECC programs, the program will develop selected user interfaces to its capabilities (for example a set of web pages for display in a browser), relying on other programs and organizations to do the same for its users and environments.

The specific programs, data sources, services, mission processes, and end user environments in the figure are examples only

**SV-2 System Communications Description**

Figure A-7 is the NECC Communications Description (SV-2). It shows the physical communications infrastructure over which NECC Capability Modules (which implement NECC services) will be deployed

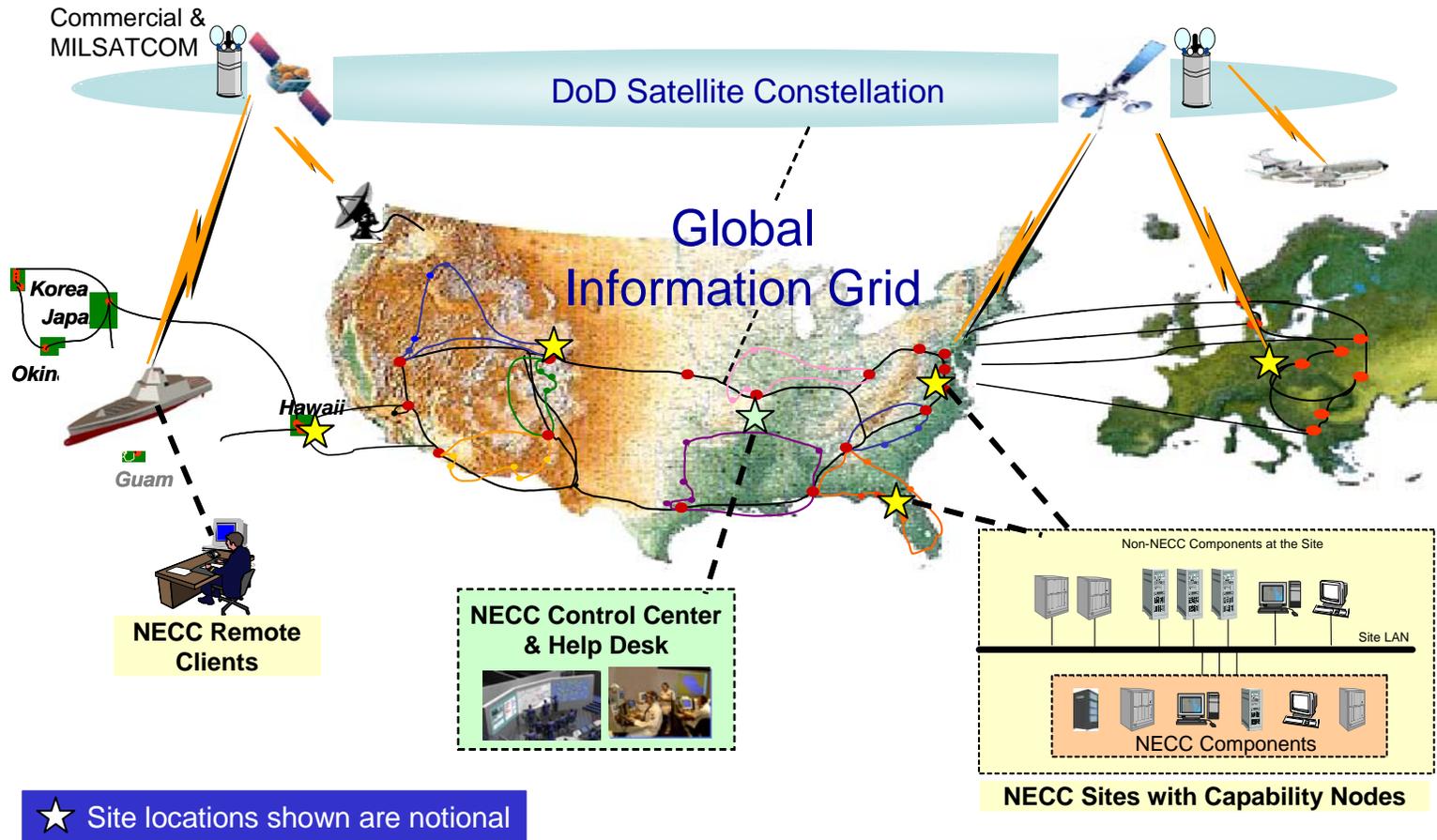


Figure A-7. NECC SV-2

**Description of the SV-2 System Communications**

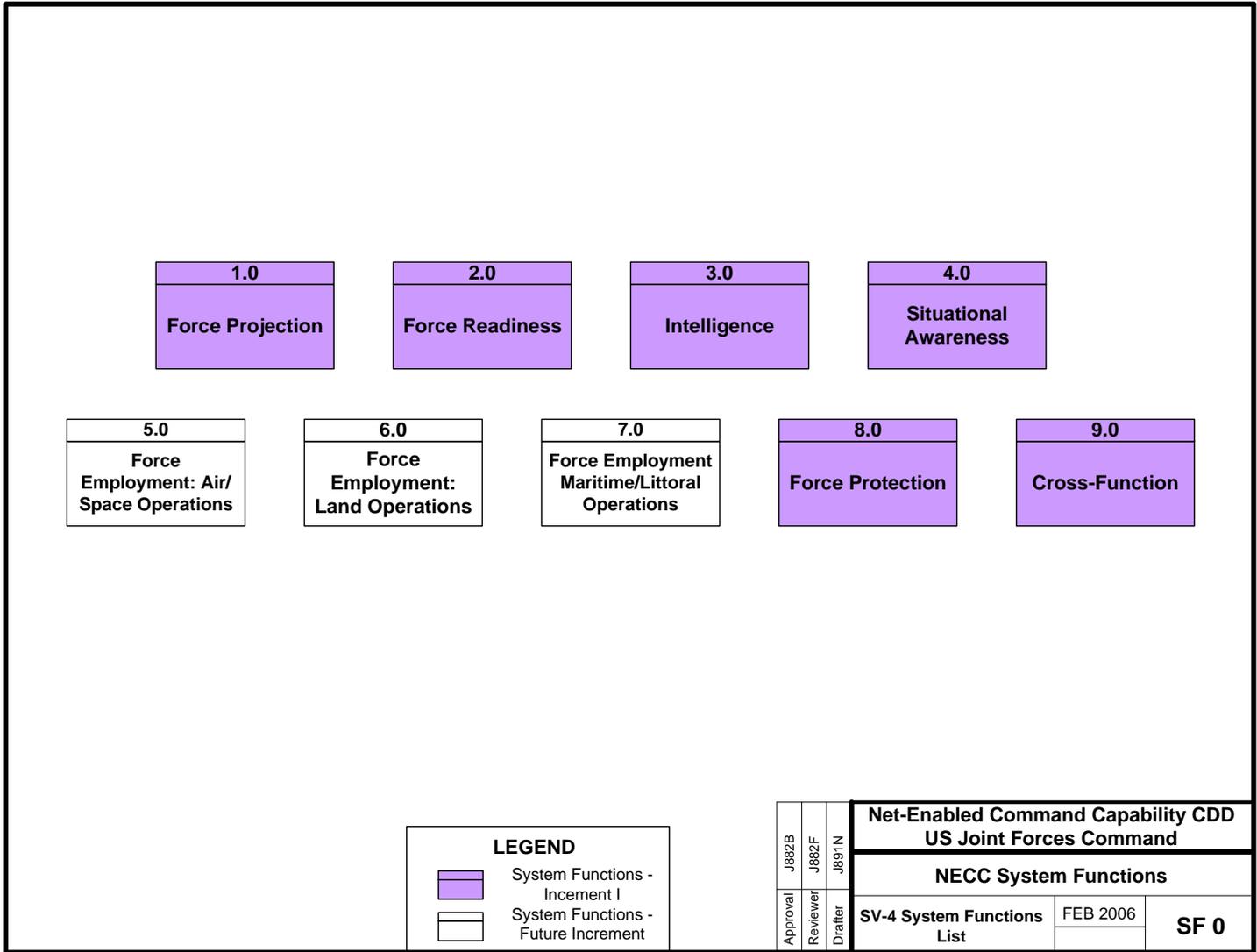
In Figure A-7, the Global Information Grid (GIG) is shown, with a notional depiction of its backbone network, the Defense Information Systems Network (DISN), and the DoD satellite constellation. NECC will utilize these communications infrastructures to provide services to end users. Furthermore, NECC consists of the following physical elements:

- NECC Capability Modules - they are a set of software and hardware that implements a set of operationally relevant, logically grouped services. Capability Module is the fundamental construct within NECC for providing operational capabilities. In general, an NECC Capability Module will be implemented as a physically distributed set of Capability Nodes, which reside at NECC Sites.
- NECC Sites - an NECC Site is a physical place (connected to other sites via the GIG) where one or more NECC components are hosted (cf. lower right of Figure A-7). These components are the computing platforms that support the Capability Nodes. Capability Nodes can be implemented on different types of platforms, such as a single server, grid computing hardware, clustered servers, or even a client workstation.
- NECC Control Center and Help Desk - an NECC Control Center is analogous to network operations centers, it supports the management of the NECC components and their proper interaction. NECC Control Centers will (i) oversee the status and health of NECC Capability Modules and (ii) monitor and manage the interaction of Capability Modules as they support operational mission activities. An NECC Help Desk provides technical and operational support to NECC customers. It focuses on resolving technical and operational problems that are introduced using a trouble ticket system as well as educating users in the proper use of NECC capabilities. Problems traced to issues with NECC components will, in addition to being worked through the tiered Help Desk System, also be directed to the NECC Control Center for use in assessing system performance.
- NECC Clients - they include NECC developed clients (software provided by NECC, and in some cases hardware), clients transitioned from GCCS Family of Systems, and third-party clients such as browsers and other commercial client software.
- The specific programs, data sources, services, mission processes, and end user environments in the figure are examples only.

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**SV-4 Functionality Description for NECC Mission Capabilities Packages**

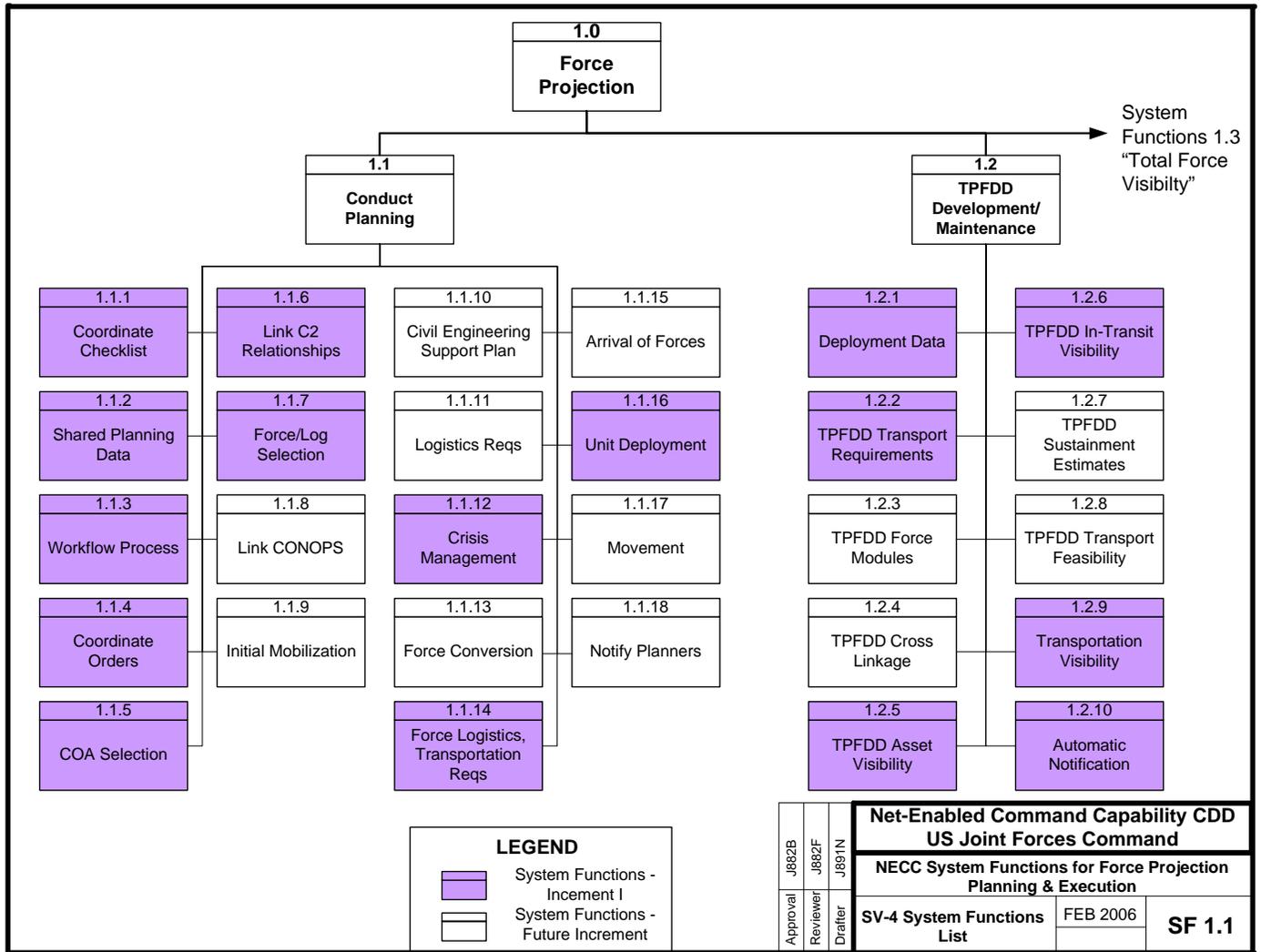
Figure A-8-1 is a base map model displaying NECC MCPs into which the functional decomposition of NECC capability has been segmented into. Purple shading indicates the MCP contains some capabilities that are included in Increment I.



**Figure A-8-1. NECC SV-4: NECC MCPs**

**SV-4 Functionality Description for NECC Force Projection – Planning and Execution**

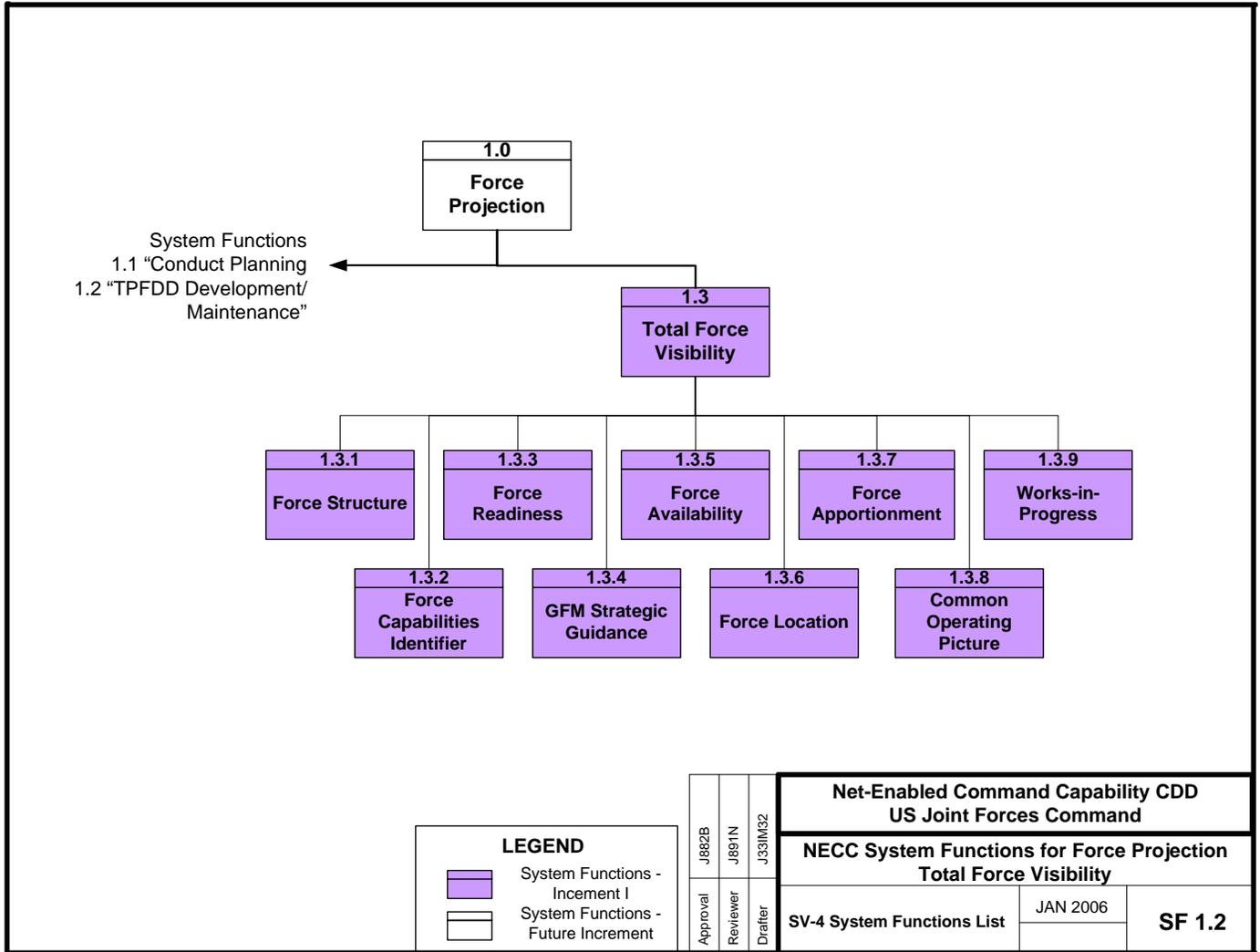
Figure A-8-2-1 is a hierarchal model documenting the functional decomposition of NECC Force Projection – Planning and Execution functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-2-1. NECC SV-4: Force Projection - Planning and Execution**

**SV-4 Functionality Description for NECC Force Projection – Total Force Visibility**

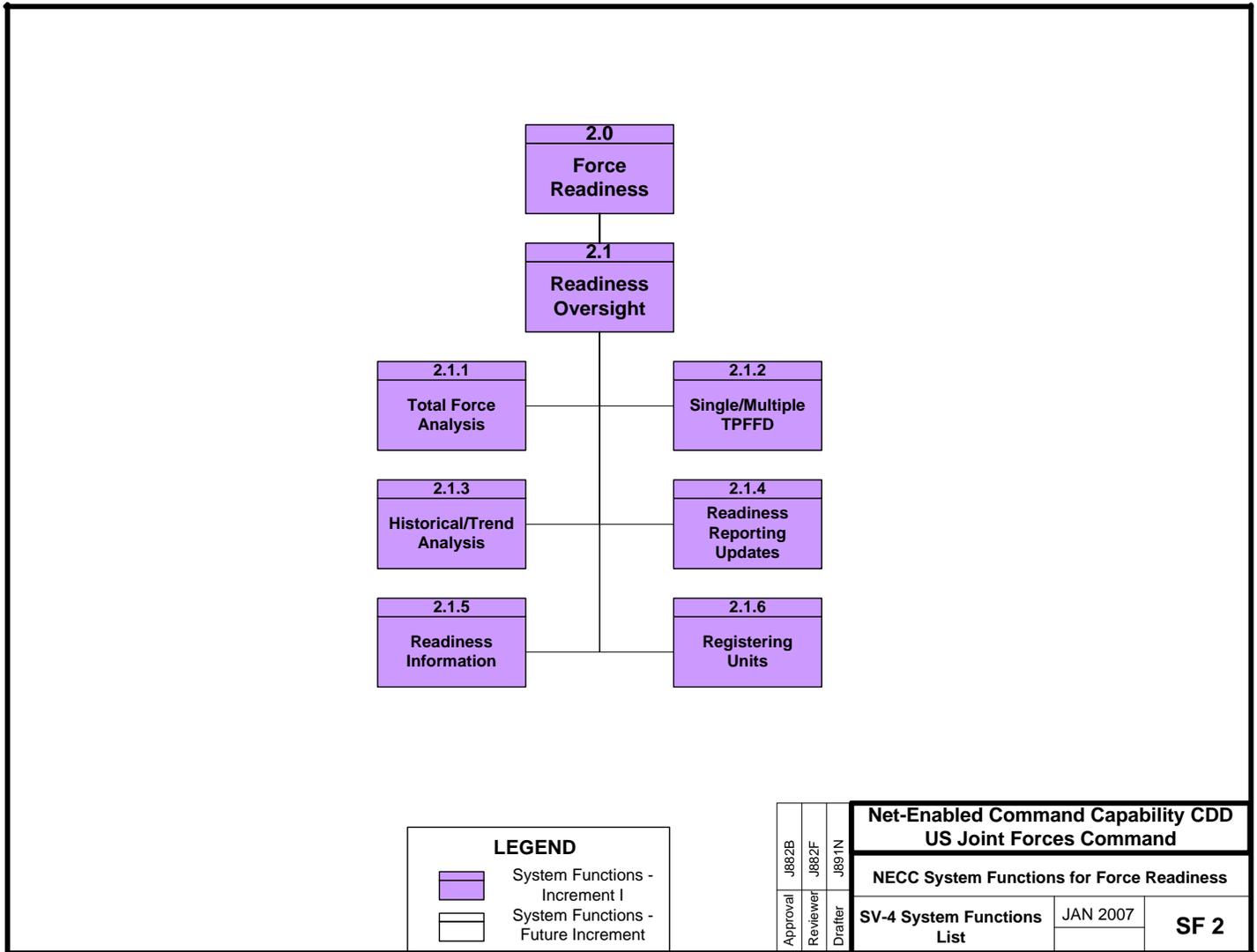
Figure A-8-2-2 is a hierarchal model documenting the functional decomposition of NECC Force Projection - Total Force Visibility functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-2-2. NECC SV-4: Force Projection - Total Force Visibility**

**SV-4 Functionality Description for NECC Force Readiness**

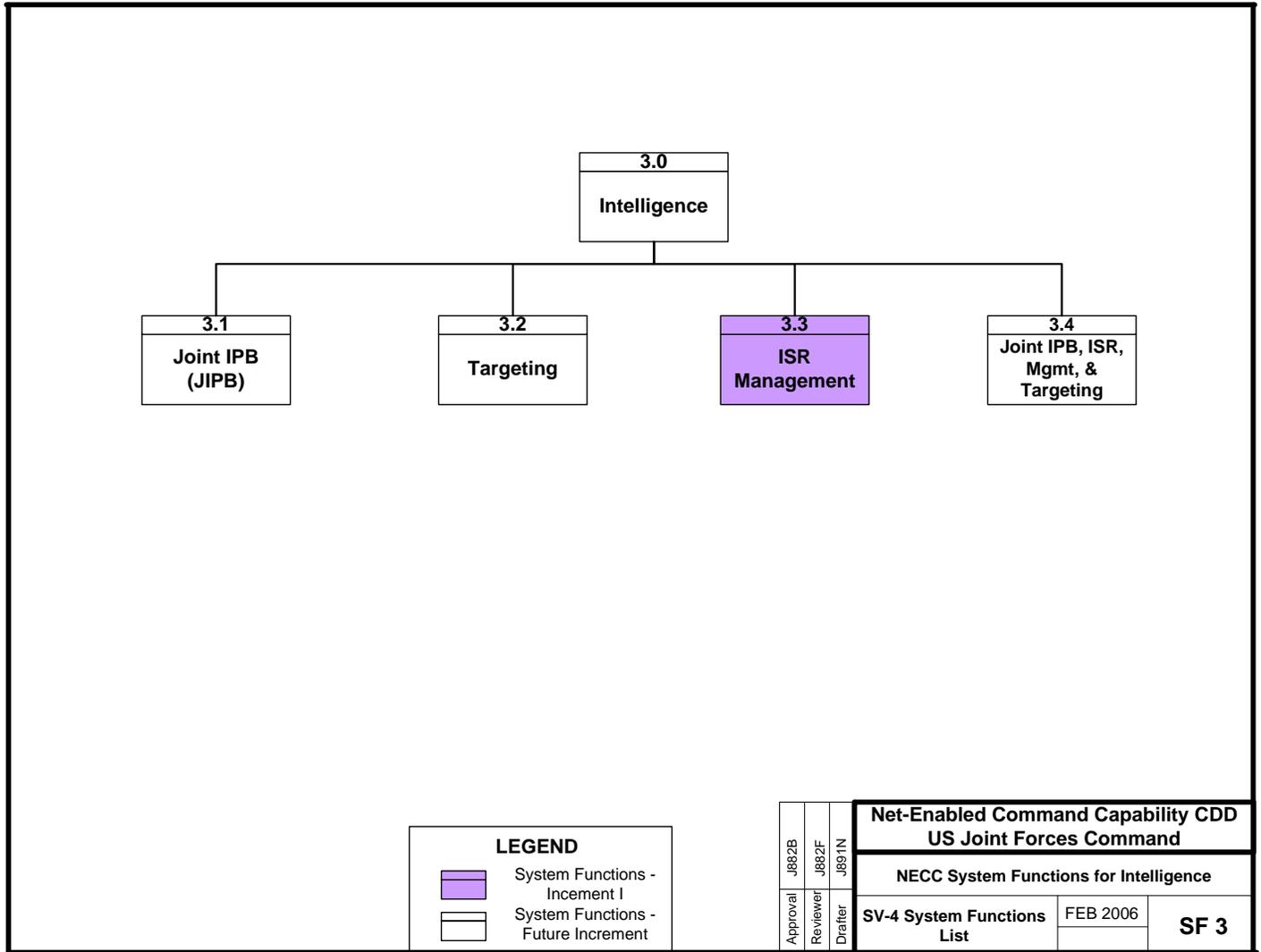
Figure A-8-3 is a hierarchal model documenting the functional decomposition of NECC Force Readiness functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-3. NECC SV-4: Force Readiness**

**SV-4 Functionality Description for NECC Intelligence**

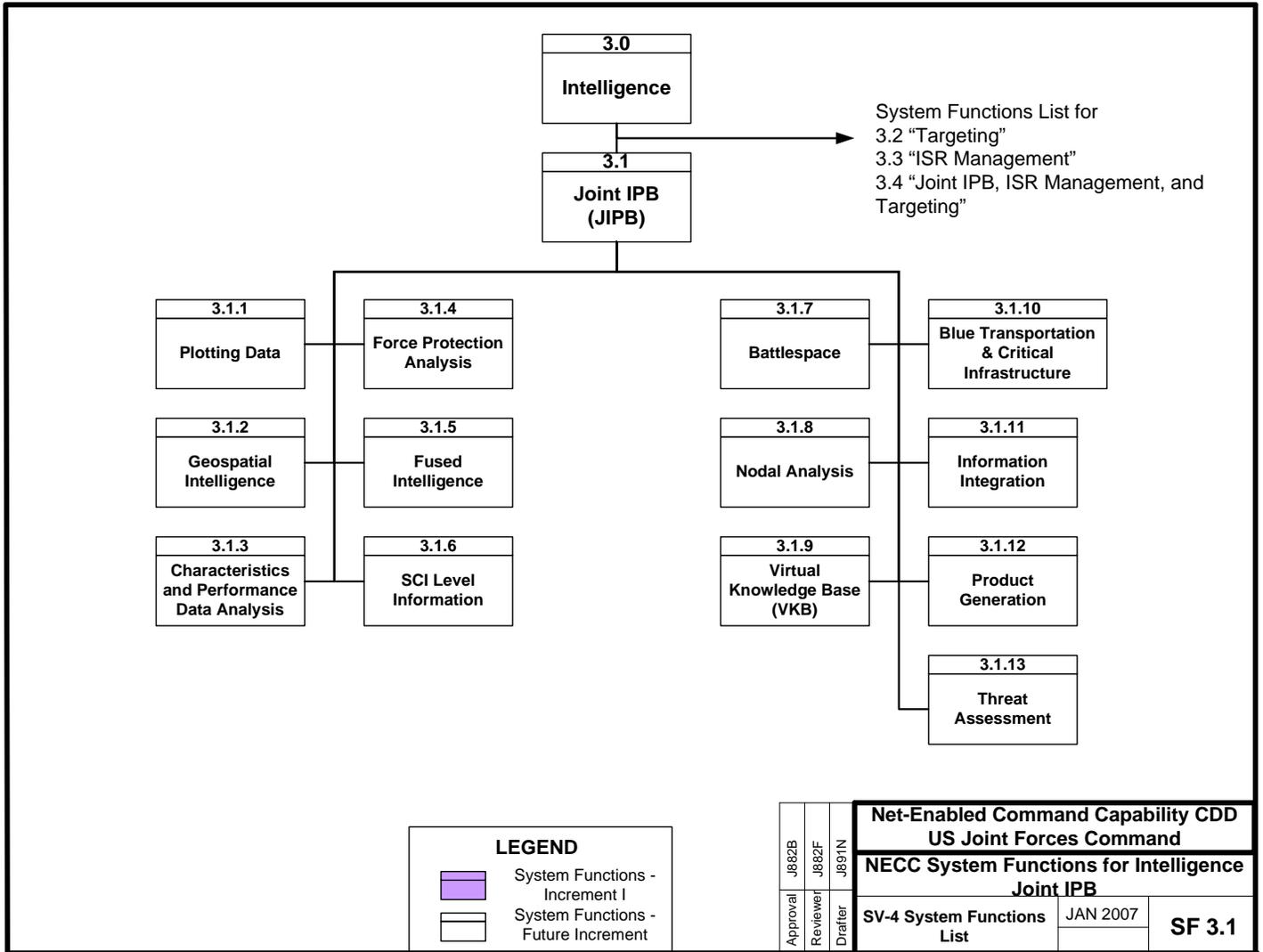
Figure A-8-4 is a hierarchal model documenting the decomposition of NECC Intelligence functionality.



**Figure A-8-4. NECC SV-4: Intelligence**

**SV-4 Functionality Description for NECC Intelligence - JIPB**

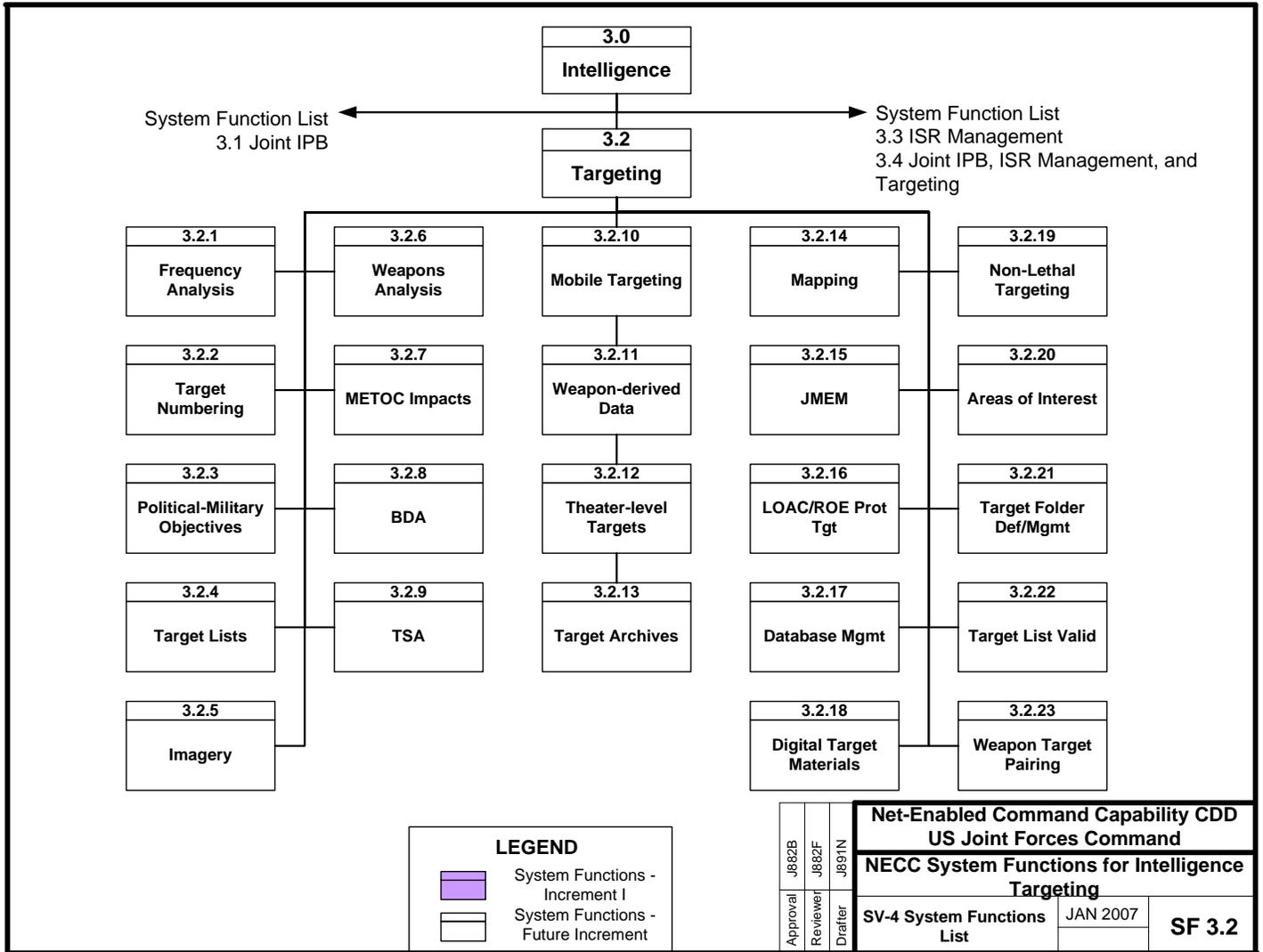
Figure A-8-4-1 is a hierarchal model documenting the functional decomposition of NECC Intelligence – JIPB functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-4-1. NECC SV-4: Intelligence – JIPB**

**SV-4 Functionality Description for NECC Intelligence – Targeting**

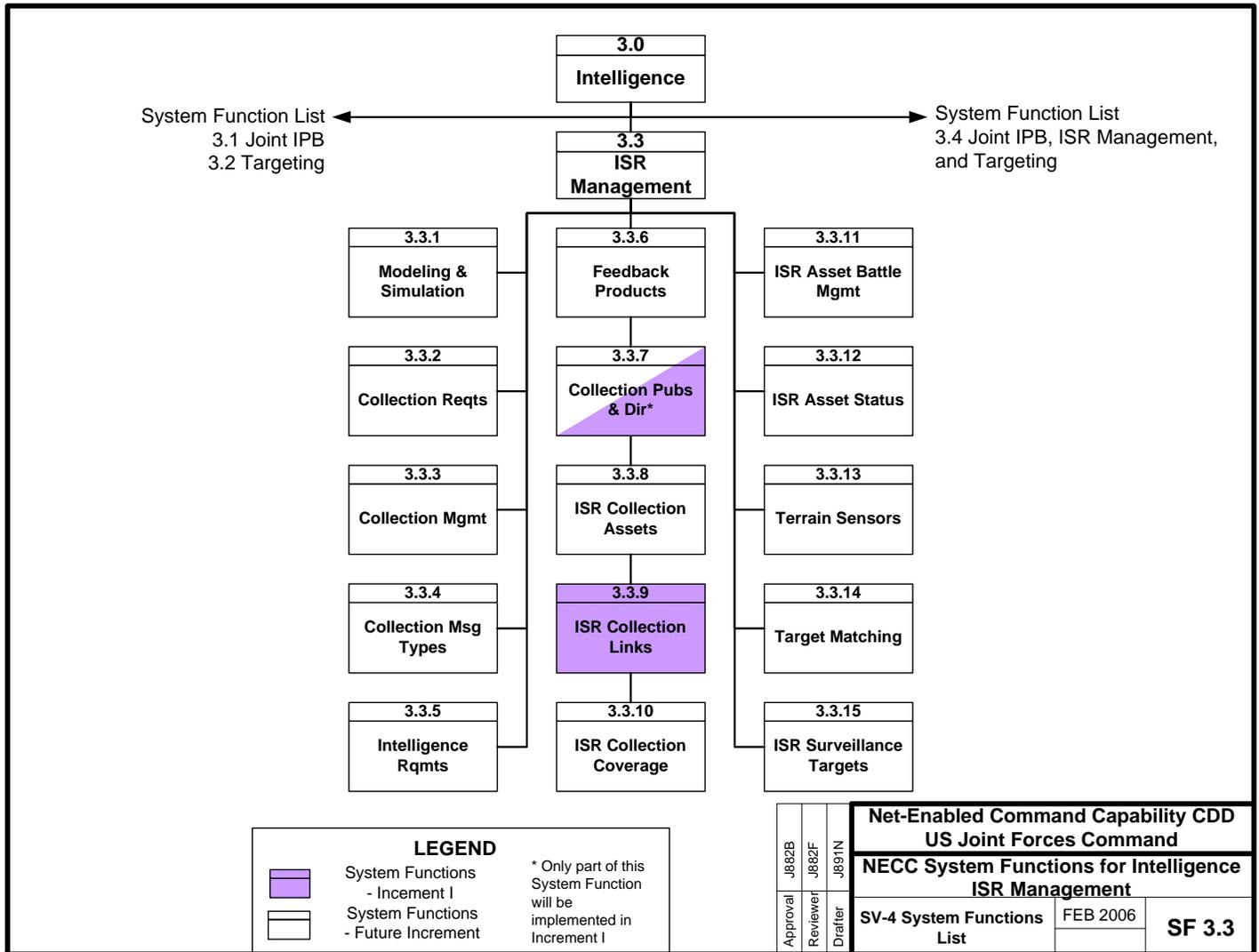
Figure A-8-4-2 is a hierarchal model documenting the functional decomposition of NECC Intelligence - Targeting functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-4-2. NECC SV-4: Intelligence - Targeting**

**SV-4 Functionality Description for NECC Intelligence – ISR Management**

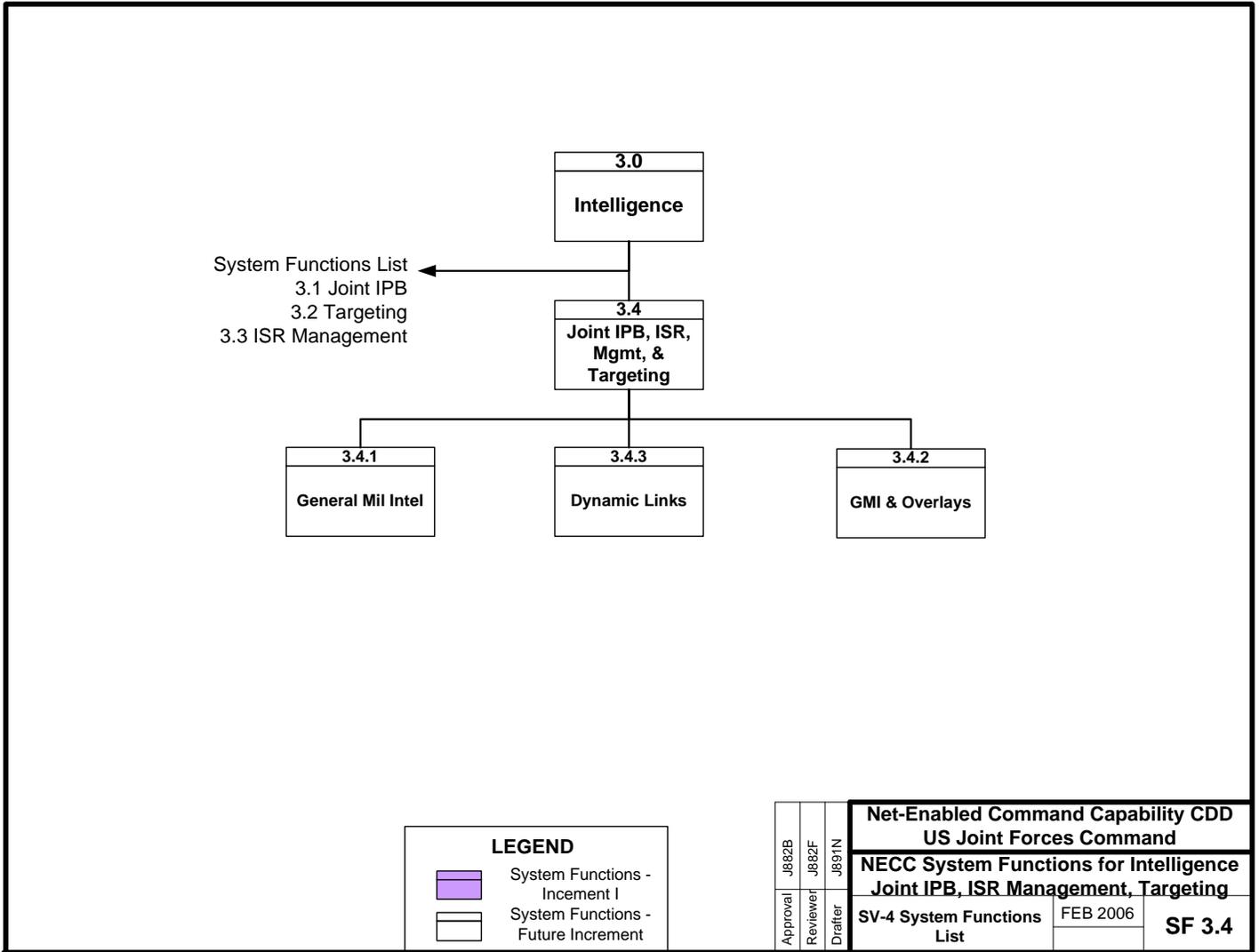
Figure A-8-4-3 is a hierarchal model documenting the functional decomposition of NECC Intelligence – ISR Management functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-4-3. NECC SV-4: Intelligence – ISR Management**

**SV-4 Functionality Description for NECC Intelligence – Joint IPB, ISR, Management and Targeting**

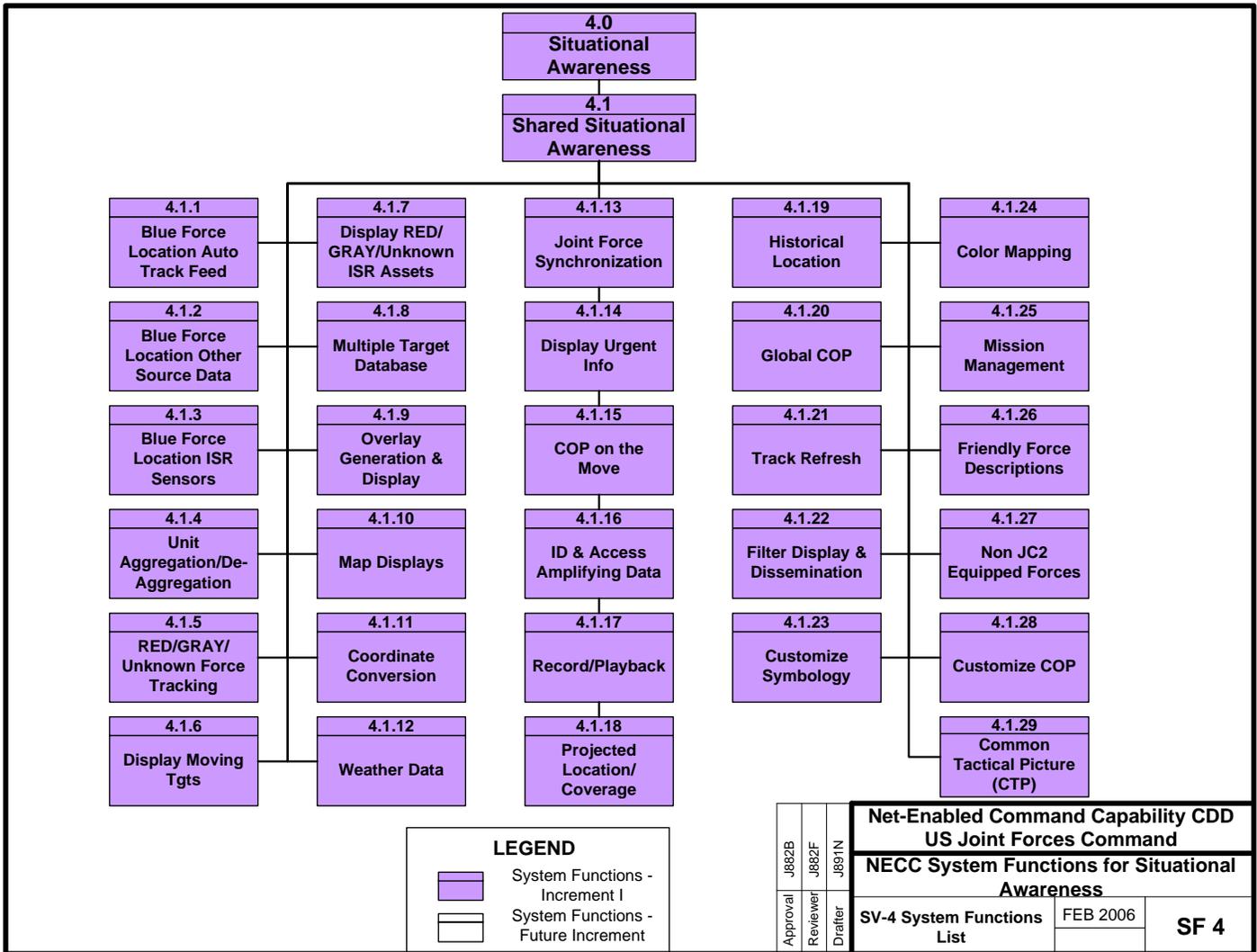
Figure A-8-4-4 is a hierarchal model documenting the functional decomposition of NECC Intelligence – Joint IPB, ISR, Management and Targeting functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-4-4. NECC SV-4: Intelligence – Joint IPB, ISR, Management and Targeting**

**SV-4 Functionality Description for NECC Situational Awareness**

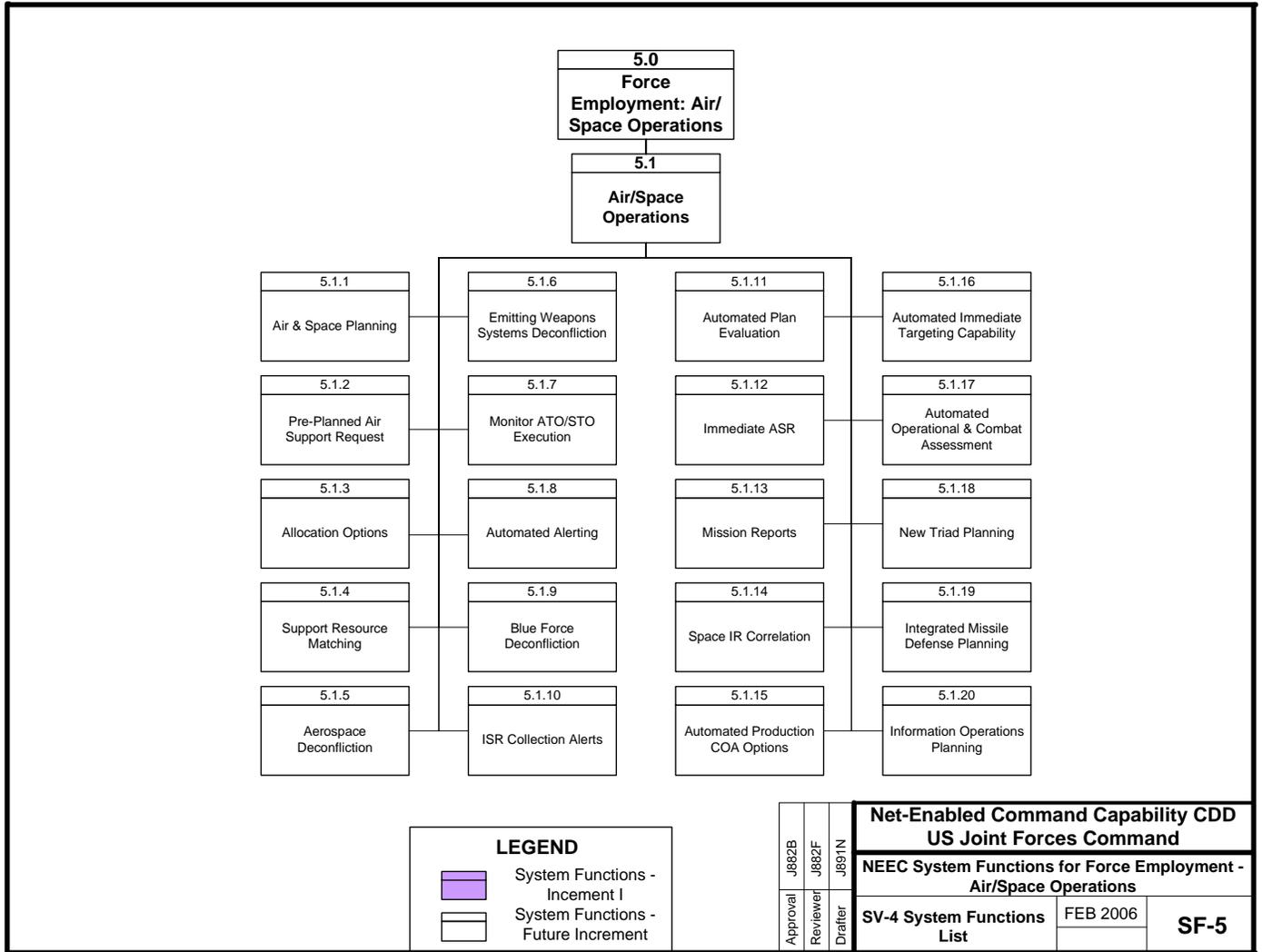
Figure A-8-5 is a hierarchal model documenting the functional decomposition of NECC Situational Awareness functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-5. NECC SV-4: Situational Awareness**

**SV-4 Functionality Description for NECC Force Employment – Air/Space Operations**

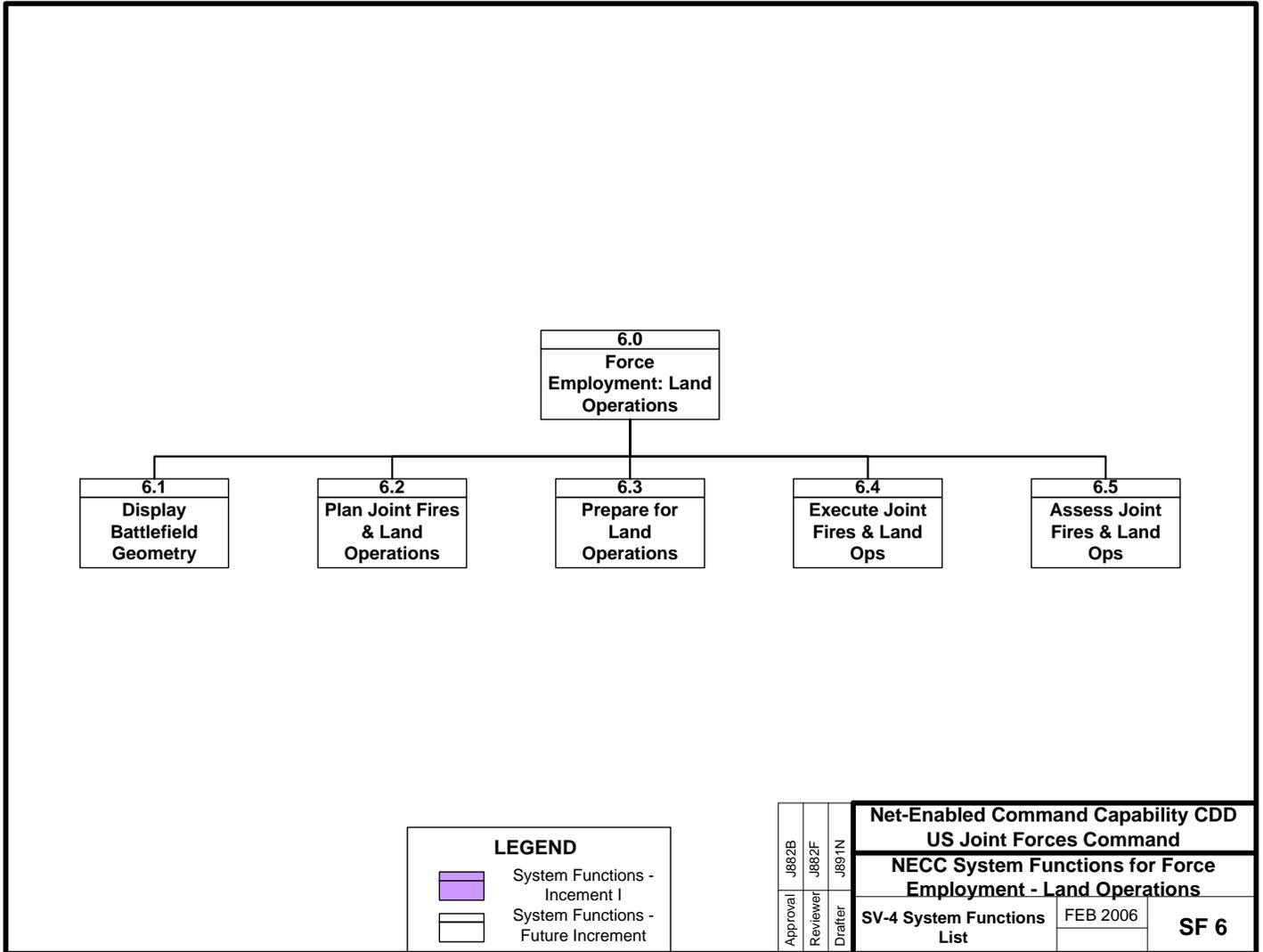
Figure A-8-6 is a hierarchal model documenting the functional decomposition of NECC Force Employment – Air/Space Operations functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-6. NECC SV-4: Force Employment – Air/Space Operations**

**SV-4 Functionality Description for NECC Force Employment – Land Operations**

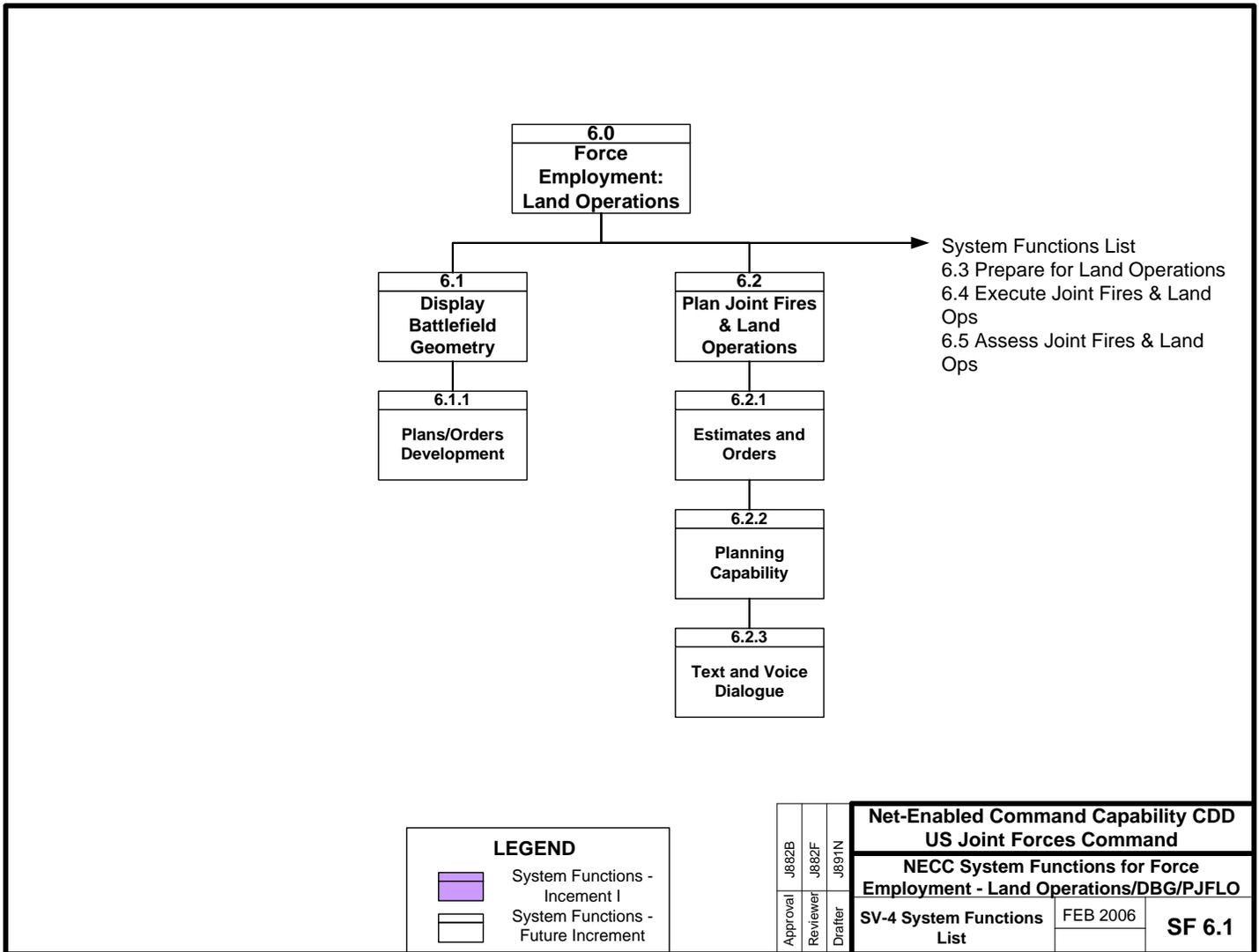
Figure A-8-7 is a hierarchal model documenting the functional decomposition of NECC Force Employment – Land Operations functionality.



**Figure A-8-7. NECC SV-4: Force Employment – Land Operations**

**SV-4 Functionality Description for NECC Force Employment – Land Operations – Display and Plan**

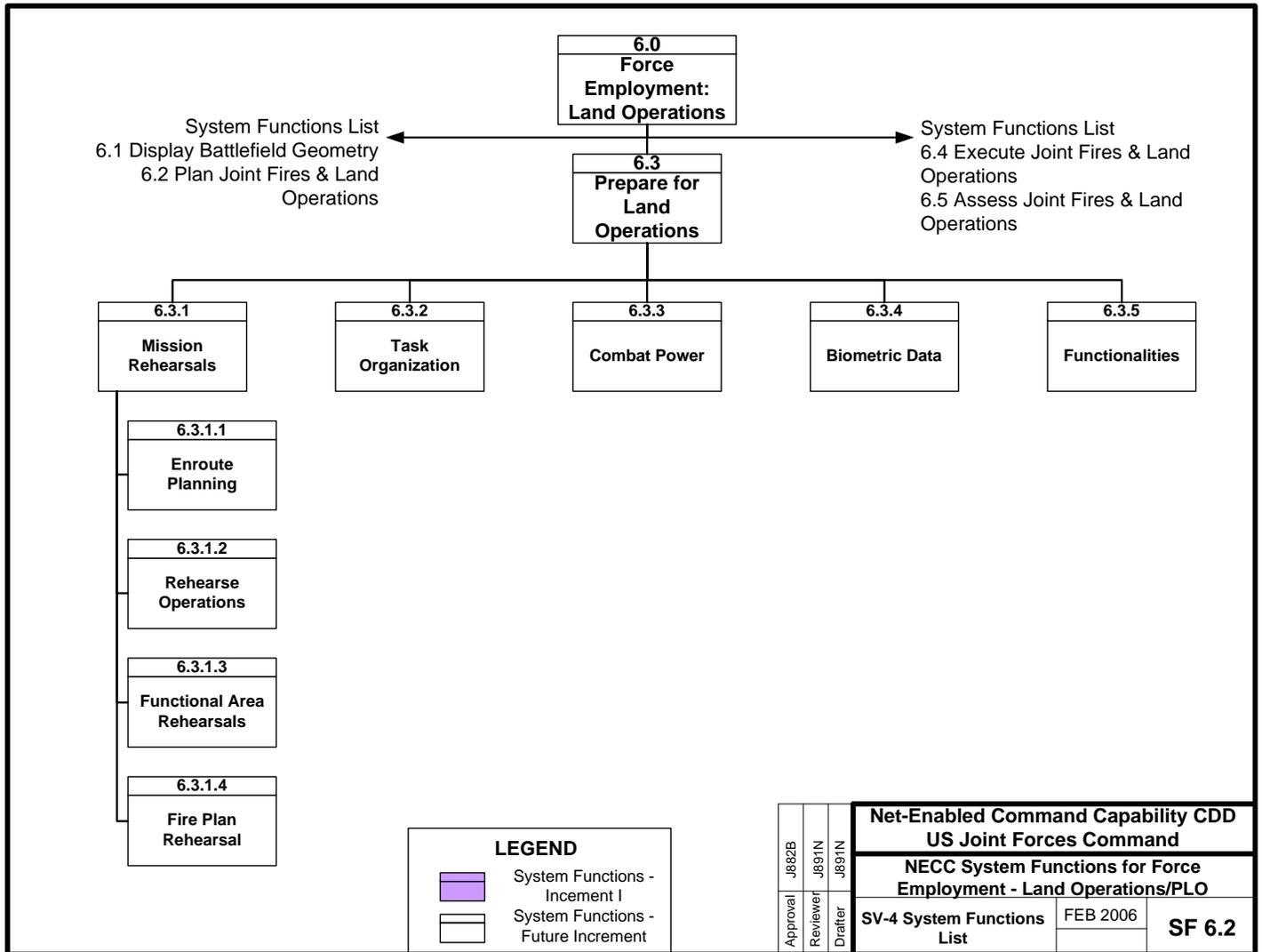
Figure A-8-7-1 is a hierarchal model documenting the functional decomposition of NECC Force Employment – Land Operations – Display and Plan functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-7-1. NECC SV-4: Force Employment – Land Operations – Display and Plan**

**SV-4 Functionality Description for NECC Force Employment – Land Operations - Prepare**

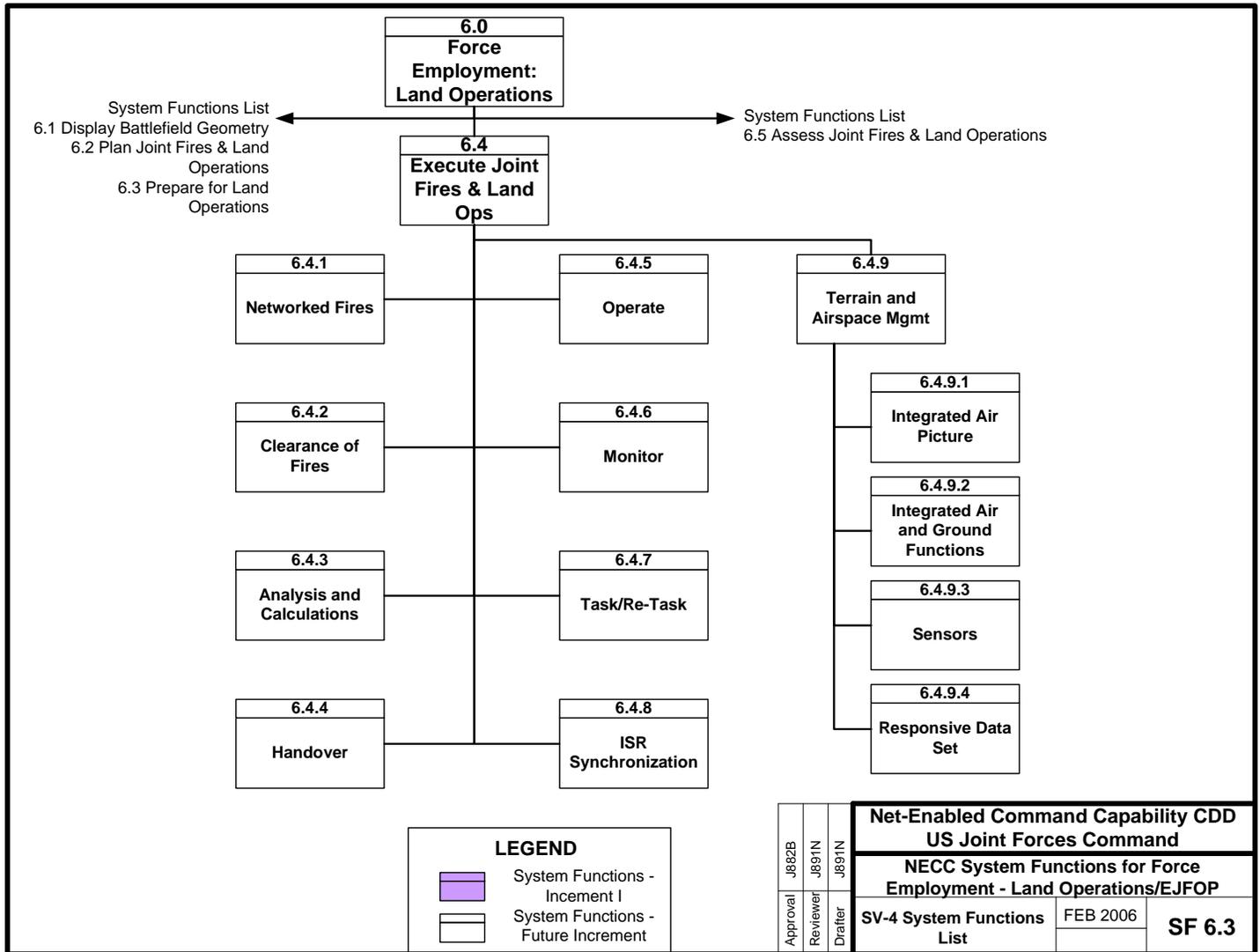
Figure A-8-7-2 is a hierarchal model documenting the functional decomposition of NECC Force Employment – Land Operations - Prepare functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-7-2. NECC SV-4: Force Employment – Land Operations - Prepare**

**SV-4 Functionality Description for NECC Force Employment – Land Operations - Execute**

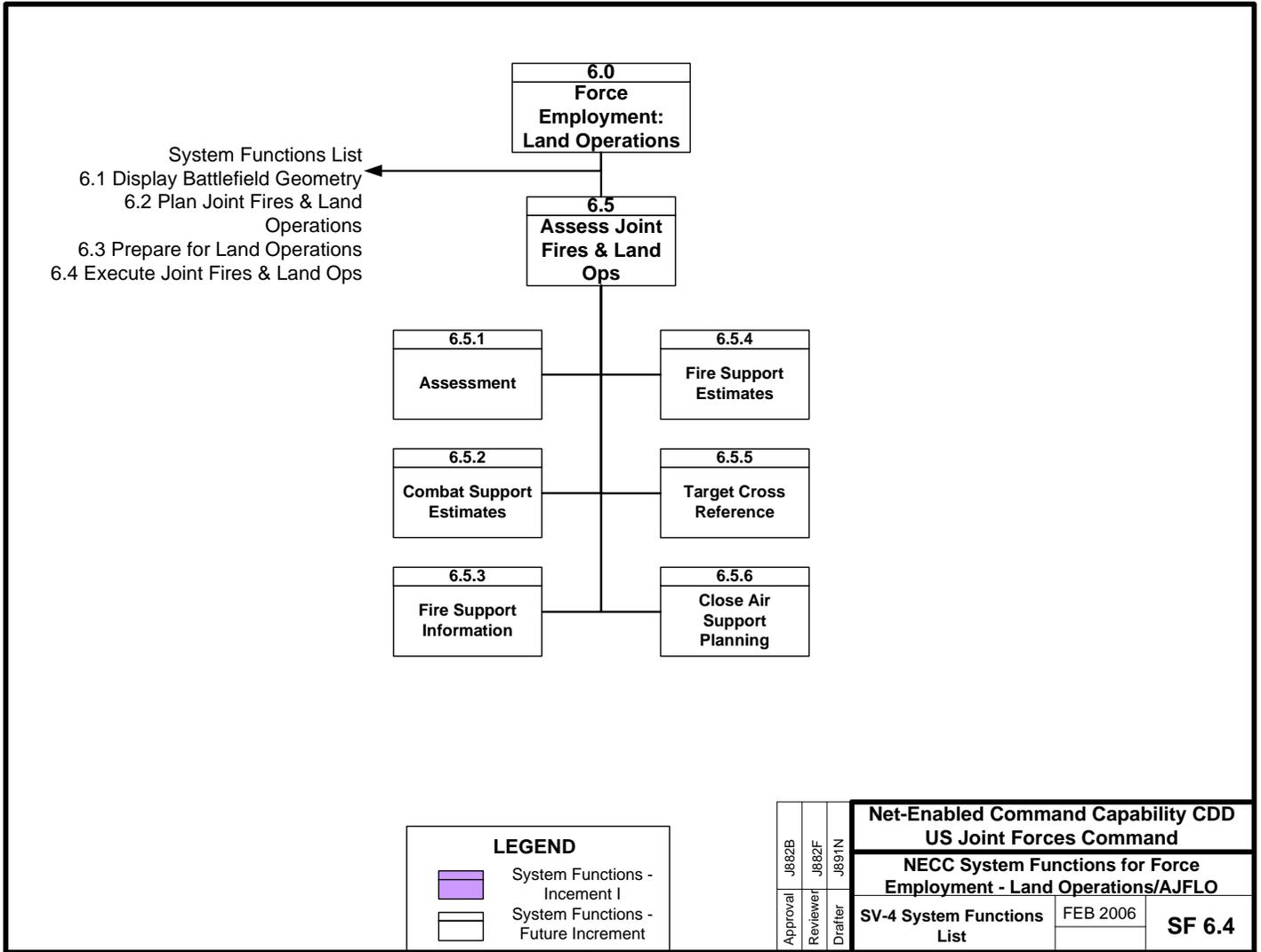
Figure A-8-7-3 is a hierarchal model documenting the functional decomposition of NECC Force Employment – Land Operations – Execute functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-7-3. NECC SV-4: Force Employment – Land Operations - Execute**

**SV-4 Functionality Description for NECC Force Employment – Land Operations - Assess**

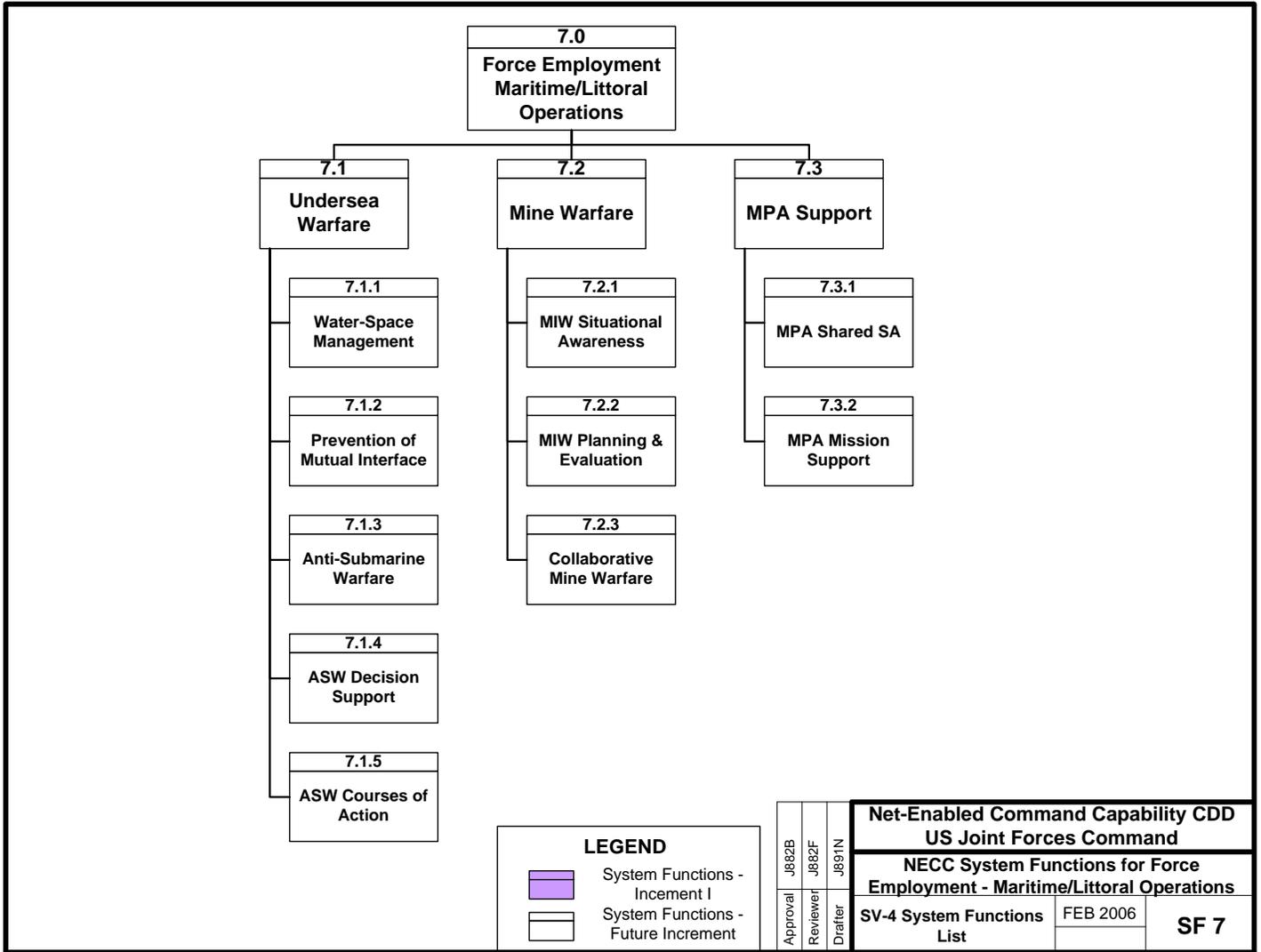
Figure A-8-7-4 is a hierarchal model documenting the functional decomposition of NECC Force Employment – Land Operations – Assess functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-7-4. NECC SV-4: Force Employment – Land Operations - Assess**

**SV-4 Functionality Description for NECC Force Employment – Maritime/Littoral Operations.**

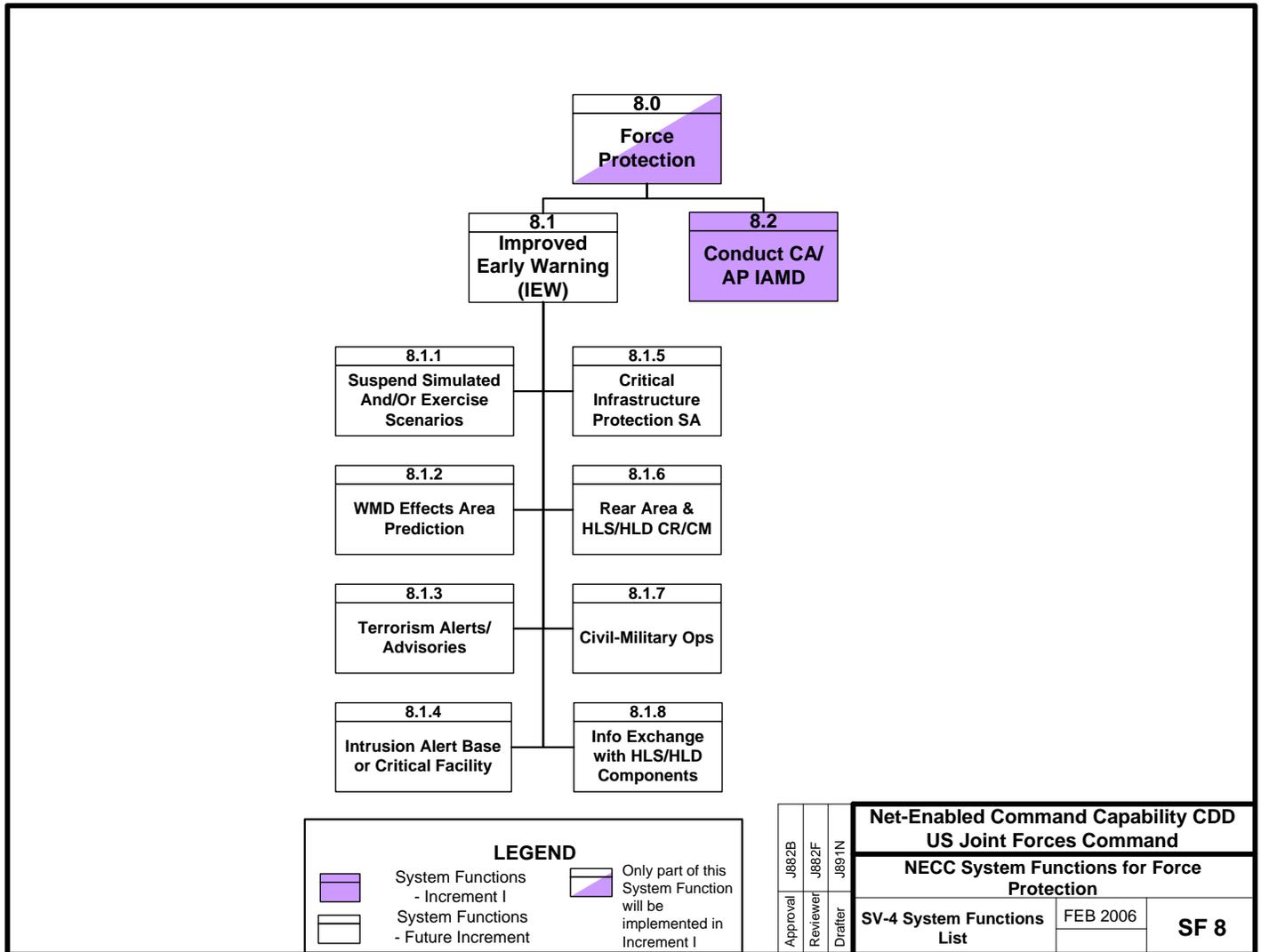
Figure A-8-8 is a hierarchal model documenting the functional decomposition of NECC Force Employment – Maritime/Littoral Operations functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-8. NECC SV-4: Force Employment – Maritime/Littoral Operations.**

**SV-4 Functionality Description for NECC Force Protection**

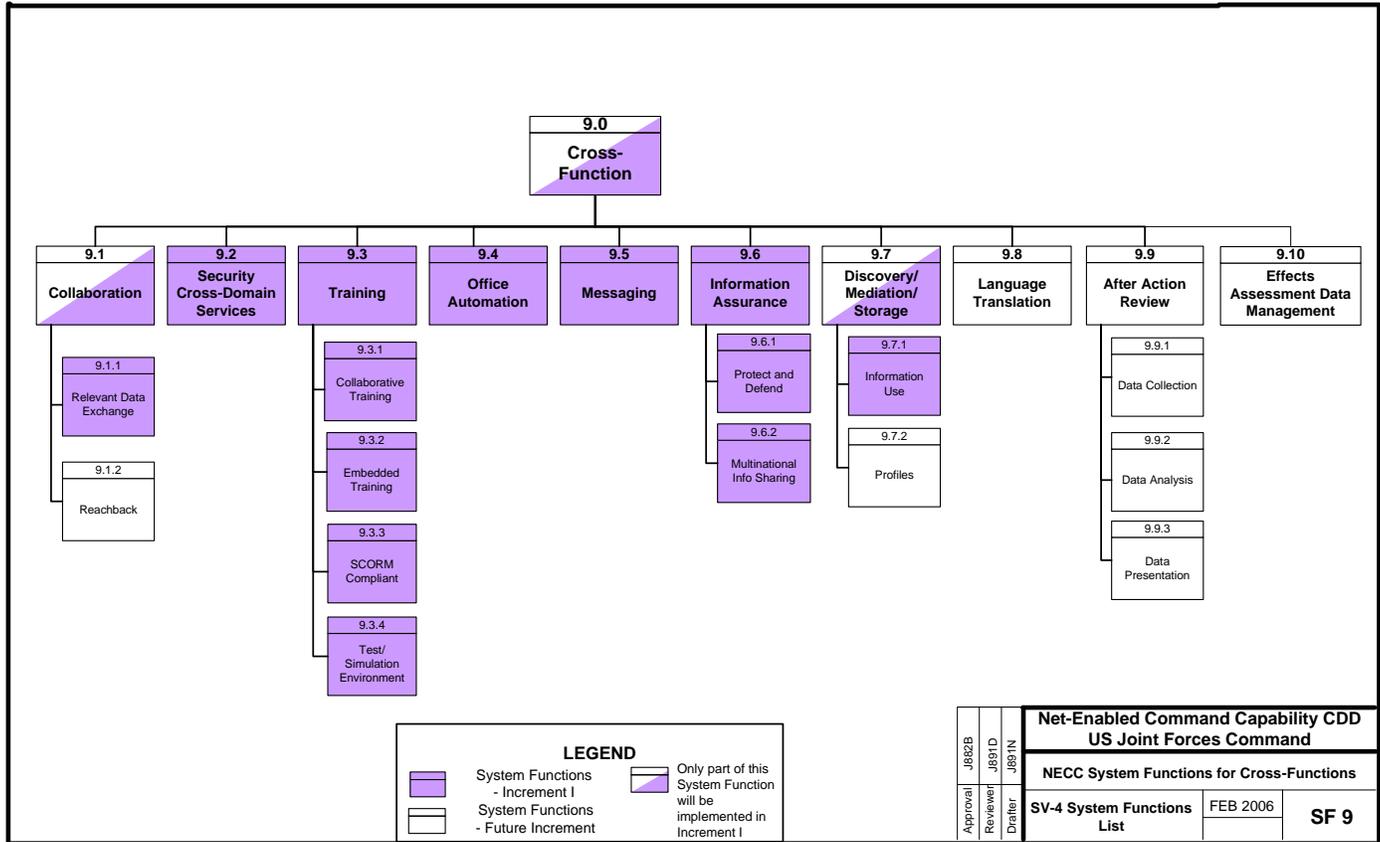
Figure A-8-9 is a hierarchal model documenting the functional decomposition of NECC Force Protection functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-9. NECC SV-4: Force Protection**

**SV-4 Functionality Description for NECC Cross-Functions**

Figure A-8-10 is a hierarchal model documenting the functional decomposition of NECC Cross-Functions functionality. It displays the various attributes and/or capabilities the Joint Force Commander needs in order to carry out the mission.



**Figure A-8-10. NECC SV-4: Cross-Functions**

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## **SV-5 Operational Activity to Function Traceability Matrix for NECC Force Projection – Planning and Execution**

Figure A-9-1-1 highlights the relationships between the operational activities and the function capabilities required for NECC Force Protection - Planning and Execution. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

<b>NECC SV-5 Force Projection – Planning and Execution</b>														
		1.1.1 Maintain Situation Awareness	1.1.2 Receive Guidance	1.1.3 Conduct Mission Assessment / Estimate of the Situation	1.1.4 Initiate Planning	1.1.5 Develop Concept / COA	1.1.6 Review Concept / COA	1.1.7 Develop Plan / OPORD	1.1.8 Review Plan / OPORD	1.1.9 Develop Supporting Plans / OPORDs	1.1.10 Reassess Plan	1.1.11 Refine / Adapt Plan	1.1.12 Execute Plan / OPORD	1.1.13 Terminate Plan
<b>Conduct Planning</b>	1.1	X	X	X	X	X	X	X	X	X	X	X	X	X
Coordinate Checklist	1.1.1	X	X	X	X	X	X	X	X	X	X	X	X	X
Shared Planning Data	1.1.2		X	X	X	X	X	X	X	X	X	X	X	X
Workflow Process	1.1.3	X	X	X	X	X	X	X	X	X	X	X	X	X
Coordinate Orders	1.1.4			X	X	X	X	X	X	X			X	
COA Selection	1.1.5					X	X							
Link C2 Relationships	1.1.6					X	X	X	X	X	X	X	X	
Force/Log Selection	1.1.7					X	X	X	X	X	X	X	X	
Link CONOPS	1.1.8					X								
Initial Mobilization	1.1.9					X		X		X			X	
Civil Eng Support Plan	1.1.10					X		X		X				

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NECC Capability Development Document Extensions – Version 1.0

7 June 2007

Logistics Reqs	1.1.11	X				X		X		X				
Crisis Management	1.1.12	X	X	X	X	X	X	X	X	X	X	X	X	X
Force Conversion	1.1.13	X				X		X		X				
Force, Logistics, Transportation Reqs	1.1.14	X				X		X		X				
Arrival of Forces	1.1.15							X		X			X	
Unit Deployment	1.1.16					X		X		X			X	
Movement	1.1.17					X		X		X			X	
Notify Planners	1.1.18		X	X	X	X	X	X	X	X	X	X	X	X
<b>TPFDD Deployment/Maint</b>	1.2													
Deployment Data	1.2.1					X		X						
Transport Needs	1.2.2					X		X		X				
Force Modules	1.2.3					X		X		X			X	
Cross Linkage	1.2.4					X		X		X			X	
Continuous Asset Visibility	1.2.5					X		X		X			X	
In-transit Visibility	1.2.6												X	

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Sustainment Estimates	1.2.7					X		X		X			X	
Transportation Feasibility	1.2.8					X		X		X			X	
Transportation Visibility	1.2.9							X		X			X	
Automatic Notification	1.2.10											X		
<b>Total Force Visibility</b>	1.3													
Force Structure	1.3.1	X		X		X		X		X		X		
Force Capabilities Identifier	1.3.2					X		X		X		X		
Force Readiness	1.3.3	X		X		X		X		X		X	X	
GFM Strategic Guidance	1.3.4	X				X		X		X		X		
Force Availability	1.3.5	X		X		X		X		X		X	X	
Force Location	1.3.6	X		X		X		X		X		X	X	
Force Apportionment	1.3.7	X				X		X		X		X		
COP	1.3.8	X		X		X		X		X		X	X	
Works-in-Progress	1.3.9							X		X		X		

**Figure A-9-1-1. NECC SV-5 Force Projection – Planning and Execution**

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**SV-5 Operational Activity to Function Traceability Matrix for NECC Force Projection – Total Force Visibility**

Figure A-9-1-2 highlights the relationships between the operational activities and the function capabilities required for NECC Force Protection – Total Force Visibility. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

<b>NECC SV-5 Force Projection – Total Force Visibility</b>					
		1.2.1 Determine Force / Capability Inventory	1.2.2 Determine Force / Capability Readiness	1.2.3 Determine Force / Capability Availability	1.2.4 Determine Force / Capability Apportionment
<b>Total Force Visibility</b>	1.3				
Force Structure	1.3.1	X			
Force Capabilities Identifier	1.3.2	X			
Force Readiness	1.3.3		X		
GFM Strategic Guidance	1.3.4			X	
Force Availability	1.3.5			X	
Force Location	1.3.6			X	
Force Apportionment	1.3.7				X
COP	1.3.8	X		X	X
Works-in-Progress	1.3.9	X	X	X	X

**Figure A-9-1-2. NECC SV-5 Force Projection – Total Force Visibility**

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**SV-5 Operational Activity to Function Traceability Matrix for NECC Force Readiness**

Figure A-9-2 highlights the relationships between the operational activities and the function capabilities required for NECC Force Readiness. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

<b>NECC SV-5 Force Readiness</b>									
		1.3.1.1 Readiness JQRR Tasking to Components	1.3.1.2 Draft JQRR Reviewed by Components	1.3.1.3 Receive/Process Components JQRR Data	1.3.1.4 Develop Final JQRR	1.3.1.5 Assess JQRR against JMETL	1.3.1.6 Submit JQRR to JS	1.3.1.7 Identify Trends and Shortfalls	1.3.1.8 Receive JQRR Feedback
<b>Readiness Oversight</b>	2.1								
Total Force Analysis	2.1.1			X		X		X	
Single/Multiple TPFDD	2.1.2							X	
Historical/Trend Analysis	2.1.3		X	X		X		X	
Readiness Reporting Updates	2.1.4			X				X	
Readiness Information	2.1.5							X	
Registering Units	2.1.6			X				X	

**Figure A-9-2. NECC SV-5: Force Readiness**

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## **SV-5 Operational Activity to Function Traceability Matrix for NECC Intelligence: JIPB**

Figure A-9-3-1 highlights the relationships between the operational activities and the function capabilities required for NECC Intelligence: JIPB. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

<b>NECC SV-5: 1.4.1 Intelligence – Joint IPB (JIPB)</b>					
		1.4.1.2 Describe Battlespace Effects	1.4.1.3 Evaluate the Adversary	1.4.1.4 Determine Adversary COA	1.4.1.1 Define Battlespace Environment
<b>JIPB</b>	3.1	X	X	X	X
Plotting Data	3.1.1	X	X	X	X
Geospatial Intelligence	3.1.2	X			X
Characteristics & Performance Data Analysis	3.1.3	X	X	X	X
Force Protection Analysis	3.1.4	X	X	X	
Fused intelligence	3.1.5	X	X	X	X
SCI Level Information	3.1.6	X	X	X	X
Battlespace	3.1.7	X		X	X
Nodal Analysis	3.1.8	X	X	X	
Virtual Knowledge Base (VKB)	3.1.9	X	X	X	X
Blue Critical Infrastructure	3.1.10	X			X
Information Integration	3.1.11	X			X
Product Generation	3.1.12	X	X	X	
Threat Assessment	3.1.13	X	X	X	
<b>Joint IPB, ISR Mgmt, &amp; Targeting</b>	3.4	X	X		X
General Military Intelligence	3.4.1	X	X		
GMI & Overlays	3.4.2		X		X
Dynamic links	3.4.3		X		X

**Figure A-9-3-1. NECC SV-5: Intelligence – JIPB**

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## **SV-5 Operational Activity to Function Traceability Matrix for NECC Intelligence: Targeting**

Figure A-9-3-2 highlights the relationships between the operational activities and the function capabilities required for NECC Intelligence: Targeting. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

### **NECC SV-5: 1.4.2 Intelligence – Targeting**

		1.4.2.1 Develop Targets	1.4.2.2 Validate Targets	1.4.2.3 Nominate Targets	1.4.2.4 Prioritize Targets	1.4.2.5 Analyze Capabilities	1.4.2.6 Monitor Joint Fires	1.4.2.7 Conduct Combat Assessment (CA)
<b>Targeting</b>	3.2	X	X	X	X	X	X	X
Frequency Analysis	3.2.1		X			X	X	X
Targeting Numbering	3.2.2	X	X	X	X			X
Political-Military Objective	3.2.3	X	X					X
Target Lists	3.2.4	X	X	X	X			
Imagery	3.2.5	X	X	X	X		X	X
Weapons Analysis	3.2.6					X		
METOC Impacts	3.2.7					X		
BDA	3.2.8							X
TSA	3.2.9		X					X
Mobile Targeting	3.2.10	X	X	X	X			
Weapon-Derived Data	3.2.11		X		X			X

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Theater-level Targets	3.2.12	X	X	X	X			
Target Archives	3.2.13	X	X	X	X	X	X	
Mapping	3.2.14	X	X	X	X	X	X	X
JMEM	3.2.15	X				X		
LOAC/ROE No Strike Target List	3.2.16					X		X
Database Mgmt	3.2.17	X	X	X	X	X		X
Digital Target Materials	3.2.18	X	X	X	X	X	X	
Non-Lethal Targeting Solutions	3.2.19	X	X	X	X	X	X	X
Areas of Interest	3.2.20	X	X				X	X
Target Folder Definition & Mgmt	3.2.21	X	X	X	X		X	X
Target List Validation	3.2.22		X					
Weapon Target Pairing	3.2.23					X		
<b>Joint IPB, ISR Mgmt, &amp; Targeting</b>	3.4	X	X		X	X	X	X
General Military Intel	3.4.1	X				X	X	X
GMI & Overlays	3.4.2	X	X		X		X	X
Dynamic links	3.4.3	X	X		X		X	X

**Figure A-9-3-2. NECC SV-5: Intelligence: Targeting**

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## **SV-5 Operational Activity to Function Traceability Matrix for NECC Intelligence: ISR Management**

Figure A-9-3-3 highlights the relationships between the operational activities and the function capabilities. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

<b>1.4.3 INTELLIGENCE - ISR MANAGEMENT</b>							
		1.4.3.1 Plan and Direction Collection	1.4.3.2 Collect ISR Information	1.4.3.3 Process & Exploit ISR Information	1.4.3.4 Analyze Information and Produce ISR Products	1.4.3.5 Disseminate & Integrate ISR Products	1.4.3.6 Evaluate Products & Provide Feedback
<b>ISR Management</b>	3.3	X	X	X	X	X	X
Modeling & Simulation	3.3.1	X					X
Collection Requirements	3.3.2	X	X				X
Collection Management	3.3.3	X	X				
Collection Message Types	3.3.4	X	X	X	X	X	X
Intelligence Requirements	3.3.5	X	X		X	X	
Feedback Products	3.3.6	X	X				X
Collection Publications and Directives	3.3.7	X	X				X
ISR Assets	3.3.8	X	X				
Link Collection Requirements and ISR Assets	3.3.9	X	X	X	X		
Collection Needs, Tasking, and Coverage	3.3.10		X	X	X	X	
ISR Asset Battle Management	3.3.11	X	X	X			X
ISR Assets Status	3.2.12	X	X	X		X	X
Terrain Masking of Sensors	3.2.13	X	X			X	
Target Match	3.2.14	X					
ISR Management, Targeting: Surveillance Targets	3.2.15			X	X		X
<b>Joint IPB, ISR Mgmt, &amp; Targeting</b>	3.4	X		X		X	X
General Military Intel	3.4.1	X		X		X	X
GMI & Overlays	3.4.2	X		X		X	X
Dynamic links	3.4.3	X		X		X	X

**Figure A-9-3-3. NECC SV-5: Intelligence: ISR Management**

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## SV-5 Operational Activity to Function Traceability Matrix for NECC Situational Awareness

Figure A-9-4 highlights the relationships between the operational activities and the function capabilities required for NECC Situational Awareness. An 'X' indicates a critical need for the Joint Force Commander and associated staffs; no 'X' does not necessarily indicate no need, the relationship may not have qualified as a critical need.

<b>NECC SV-5: Situational Awareness</b>										
		1.5.1 Understand Mission Goals & Commander's Intent	1.5.2 Develop/Employ IM & KM	1.5.3 Understand Nature States and Environ. States	1.5.4 Assess / Provide Intel	1.5.5 Understand Red/Grey States	1.5.6 Understand Blue Force & Resource States	1.5.7 Understand Constraints	1.5.8 Assess Operational Situation	1.5.9 Determine Projective States (M&S)
<b>Shared Situational Awareness</b>	4.1		X		X	X	X			
Blue Force Location Auto Track Feed	4.1.1		X	X	X		X		X	X
Blue Force Location Other Data Sources	4.1.2		X		X		X		X	X
Blue Force Location ISR Sensors	4.1.3		X		X		X		X	X
Unit Aggregation/ De-Aggregation	4.1.4		X		X		X			
RED/GRAY/ Unknown Force Tracking	4.1.5		X		X	X			X	X
Display Moving Targets	4.1.6		X		X	X			X	X
Display RED/ GRAY/ Unknown ISR Assets	4.1.7		X		X	X			X	X
Multiple Target Database	4.1.8		X		X	X			X	
Overlay Generation & Display	4.1.9	X						X	X	X
Map Displays	4.1.10		X	X	X			X	X	X
Coordinate Conversion	4.1.11			X	X	X	X		X	X
METOC Data	4.1.12		X	X	X				X	

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Joint Force Synchronization	4.1.13		X		X	X	X	X	X	X
Display Urgent Information	4.1.14	X	X	X	X	X	X	X	X	
COP on the Move	4.1.15	X	X	X	X	X	X	X	X	
ID & Access Amplifying Data	4.1.16	X	X	X	X	X	X		X	
Record/Playback	4.1.17		X	X	X	X	X		X	X
Projected Location/ Coverage	4.1.18		X		X	X	X		X	
Historical Location	4.1.19		X		X	X	X		X	
Global COP	4.1.20		X	X	X	X	X	X	X	X
Track Refresh	4.1.21	X	X		X	X	X	X	X	
Filter Display & Dissemination	4.1.22		X		X	X	X		X	X
Customize Symbology	4.1.23		X		X	X	X		X	
Color Mapping	4.1.24		X	X	X				X	X
Mission Management	4.1.25	X	X		X	X	X		X	X
Friendly Force Descriptions	4.1.26				X				X	X
Non NECC Equipped Forces	4.1.27		X							
Customized COP	4.1.28	X	X		X				X	X
Common Tactical Picture (CTP)	4.1.29	X	X	X	X	X	X	X	X	X

**Figure A-9-4. NECC SV-5: Situational Awareness**

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## SV-5 Operational Activity to Function Traceability Matrix for NECC Force Employment: Air / Space Operations – IMS and Planning

Figure A-9-5-1 highlights the relationships between the operational activities and the function capabilities required for NECC Force Employment: Air/Space. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

		1.6.1 Info Management Support						1.6.2 Planning Spt		
		1.6.1.1 Provide Info Mgmt Govern/Organize	1.6.1.2 Establish Component CCIRs	1.6.1.3 Manage Routine RFIs	1.6.1.4 Manage Order of Battle Info	1.6.1.5 Manage Joint Common Tactical Picture (CTP)	1.6.1.6 Manage Compon Info Assur/NW Defensive Opns	1.6.2.1 Produce Joint Air/Space Operation Plan (JAOP)	1.6.2.2 Provide Specific Plans & Guidance	1.6.2.3 Task Air & Space Capabilities/Forces
<b>Air/Space Operations</b>	5.1									
Air & Space Planning	5.1.1							X	X	X
Pre-planned Air Support Request	5.1.2						X	X	X	X
Allocation Options	5.1.3							X	X	X
Support Resource Matching	5.1.4							X	X	X
Aerospace Deconfliction	5.1.5					X		X	X	X
Emitting Weapons Systems Deconfliction	5.1.6					X		X	X	X
Monitor ATO/STO Execution	5.1.7					X	X			

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Automated Alerting	5.1.8					X				
Blue Force Deconflict	5.1.9					X				
ISR Collection Alerts	5.1.10					X				
Automated Plan Evaluation	5.1.11							X	X	X
Immediate ASR	5.1.12	This Function is covered in Figure A-9-5-2 by Activity 1.6.3 "Execution Support"								
Mission Reports	5.1.13				X	X				
Space IR Correlation	5.1.14					X				
Automated Production COA Options	5.1.15							X	X	
Automated Immediate Target Capability	5.1.16	This Function is covered in Figure A-9-5-2 by Activity 1.6.3 "Execution Support"								
Automated Operational & Combat Assessment	5.1.17	This Function is covered in Figure A-9-5-2 by Activity 1.6.4 "Assessment Support"								
New Triad Planning	5.1.18	X						X	X	X
Integrated Missile Defense Planning	5.1.19	X						X	X	X
Information Operations Planning	5.1.20	X						X	X	X

**Figure A-9-5-1. NECC SV-5: Force Employment: Air / Space Operations – IMS and Planning**

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**SV-5 Operational Activity to Function Traceability Matrix for NECC Force Employment: Air / Space Operations – Execution and Assessment**

Figure A-9-5-2 highlights the relationships between the operational activities and the function capabilities required for NECC Force Employment: Air/Space Operations – Execution and Assessment. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

		1.6.3 Execution Support				1.6.4 Assessment Support	
		1.6.3.1 Manage Execution of Planned Operations	1.6.3.2 Manage Execution of Dynamic Air Operations	1.6.3.3 Manage Execution Support	1.6.4.1 Analyze Assessment Factors and Criteria	1.6.4.2 Assess Munitions Effectiveness	1.6.4.3 Assess Battle Damage
<b>Air/Space Operations</b>	5.1						
Air & Space Planning	5.1.1	X	X		X	X	X
Pre-planned Air Support Request	5.1.2	X					
Allocation Options	5.1.3	X	X				
Support Resource Matching	5.1.4	X	X	X			
Aerospace Deconfliction	5.1.5	X	X	X			
Emitting Weapons Systems Deconfliction	5.1.6	X	X	X			
Monitor ATO/STO Execution	5.1.7	X	X	X		X	X

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Automated Alerting	5.1.8		X				
Blue Force Deconflict	5.1.9	X	X	X			
ISR Collection Alerts	5.1.10	X	X				
Automated Plan Evaluation	5.1.11	This Function is covered in Figure A-9-5-1 by Activity 1.6.2 "Planning Support"					
Immediate ASR	5.1.12		X				
Mission Reports	5.1.13	X	X	X		X	X
Space IR Correlation	5.1.14	X	X			X	X
Automated Production COA Options	5.1.15	This Function is covered in Figure A-9-5-1 by Activity 1.6.2 "Planning Support"					
Automated Immediate Target Capability	5.1.16		X	X			
Automated Operational & Combat Assessment	5.1.17				X	X	X
New Triad Planning	5.1.18	X					
Integrated Missile Defense Planning	5.1.19	X					
Information Operations Planning	5.1.20	X					

**Figure A-9-5-2. NECC SV-5: Force Employment: Air / Space Operations – Execution and Assessment**

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## SV-5 Operational Activity to Function Traceability Matrix for NECC Force Employment: Land Operations

Figure A-9-6 highlights the relationships between the operational activities and the function capabilities required for NECC Force Employment: Land Operations. An 'X' indicates a critical need for the Joint Force Commander and associated staffs; no 'X' does not necessarily indicate no need, the relationship may not have qualified as a critical need.

<b>NECC SV-5: Force Employment: Land Operations</b>							
		1.7.1 Conduct Operational Movement and Maneuver	1.7.2 Provide Operational ISR	1.7.3 Employ Operational Firepower	1.7.4 Provide Operational Logistics and Personnel Support	1.7.5 Provide Operational C2	1.7.6 Provide Operational Force Protection
<b>Display Battlefield Geometry</b>	6.1						
Plans / Orders Development	6.1.1	X	X	X	X	X	X
<b>Plan Joint Fires &amp; Land Ops</b>	6.2						
Estimate and Orders	6.2.1	X	X	X	X	X	X
Planning Capability	6.2.2	X	X	X	X	X	X
Text & Voice Dialogue	6.2.3	X	X	X	X	X	X
<b>Prepare for Land Ops</b>	6.3						
Mission Rehearsals	6.3.1	X		X		X	
Enroute Planning	6.3.1.1					X	
Rehearse Operations	6.3.1.2	X		X		X	
Functional Area Rehearsals	6.3.1.3	X	X	X	X	X	X
Fire Plan Rehearsal	6.3.1.4	X		X		X	
Task Organization	6.3.2	X				X	
Combat Power	6.3.3	X	X	X	X	X	X
Biometric Data	6.3.4				X		X

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Functionalities	6.3.5					X	
<b>Execute Joint Fires &amp; Land Ops</b>	6.4						
Networked Fires	6.4.1	X		X		X	
Clearance of Fires	6.4.2	X		X		X	
Analysis & Calculations	6.4.3	X		X		X	
Handover	6.4.4	X	X	X		X	
Operate	6.4.5	X	X	X	X	X	X
Monitor	6.4.6	X	X	X	X	X	X
Task/Re-Task	6.4.7		X				
ISR Synchronization	6.4.8		X			X	
Terrain & Airspace Mgmt	6.4.9	X	X	X	X	X	X
Integrated Air Picture	6.4.9.1	X	X	X		X	X
Integrated Air & Ground Functions	6.4.9.2	X	X	X		X	
Sensors	6.4.9.3		X			X	X
Responsive Data Set	6.4.9.4		X	X			
<b>Assess Joint Fires &amp; Land Ops</b>	6.5						
Assessment	6.5.1	X	X	X		X	
Combat Support Estimates	6.5.2	X		X	X	X	
Fire Support Information	6.5.3	X		X			
Fire Support Estimates	6.5.4			X			
Target Cross Reference	6.5.5			X			
Close Air Support Planning	6.5.6	X		X			

**Figure A-9-6. NECC SV-5: Force Employment: Land Operations**

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## **SV-5 Operational Activity to Function Traceability Matrix for NECC Force Employment: Maritime/Littoral Operation**

Figure A-9-7 highlights the relationships between the operational activities and the function capabilities required for NECC Force Employment: Maritime/Littoral Operations. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

		1.8.1 Command and Control	1.8.2 Coordination and Deconfliction	1.8.3 Communication Systems Support and ISR	1.8.4 Movement and Maneuver	1.8.5 Fires	1.8.6 Force Protection	1.8.7 Logistic Support	1.8.8 Planning
Undersea Warfare	7.1	X	X		X	X	X		X
Water-space Management	7.1.1	X	X		X				X
Prevention of Mutual Interference	7.1.2	X	X		X	X			X
Anti-Submarine Warfare	7.1.3	X	X		X	X	X		X
ASW Decision Support	7.1.4	X	X				X		X
ASW Courses of Action	7.1.5	X	X		X		X		X
Mine Warfare	7.2	X	X		X		X		X
MIW Situational Awareness	7.2.1	X	X		X				X
MIW Mission Planning & Execution	7.2.2	X	X		X	X	X		X
Collaborative Mine Warfare	7.2.3	X	X		X		X		X
MPA Support	7.3	X	X	X	X		X		X
MPA Shared SA	7.3.1	X	X	X	X				X
MPA Mission Support	7.3.2	X	X		X			X	

**Figure A-9-7. NECC SV-5: Force Employment: Maritime/Littoral Operations**

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**SV-5 Operational Activity to Function Traceability Matrix for NECC Force Protection**

Figure A-9-8 highlights the relationships between the operational activities and the function capabilities required for NECC Force Protection. An ‘X’ indicates a critical need for the Joint Force Commander and associated staffs; no ‘X’ does not necessarily indicate no need, the relationship may not have qualified as a critical need.

		1.9.1 Acquire and Communicate Operational level Information and Maintain Status (OP 5.1)	1.9.2 Assess Operational Situation (OP 5.2)	1.9.3 Prepare Plans and Orders (OP 5.3)	1.9.4 Coordinate and Integrate Joint/Multinational and Interagency Support (OP 5.7)	1.9.5 Provide Operational Air, Space, and Missile Defense (OP 6.1)	1.9.6 Provide Protection for Operational Forces, Means, and Noncombatants (OP 6.2)	1.9.7 Protect Systems and Capabilities in the Joint Operations Area (OP 6.3)	1.9.8 Provide Security for Operational Forces and Means (OP 6.5)	1.9.9 Coordinate Active CBRNE Defense in the JOA (OP 7.2)	1.9.10 Coordinate Passive CBNE Defense in JOA (OP 7.3)	1.9.11 Coordinate Consequence Management (CM) in JOA (OP 7.4)
<b>Force Protection</b>	8											
Improved Early Warning (IEW).	8.1					X	X					
Suspend Simulated and/or Exercise Scenarios.	8.1.1 (Note 1)	X				X	X					
Weapons of Mass Destruction (WMD) Effects Area Prediction.	8.1.2		X	X	X	X	X		X	X		

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Terrorism Alerts/Advisories.	8.1.3	X	X				X		X		X	
Alert for Intrusion of Base or Critical Facility.	8.1.4								X		X	
Critical Infrastructure Protection SA.	8.1.5	X	X		X			X				X
Rear Area and HS/HD: Crisis Response/Consequence Management.	8.1.6		X		X		X		X			X
Civil-Military Operations.	8.1.7				X				X			X
Information Exchange.	8.1.8	X			X	X						
Conduct Crisis Action/Contingency Planning: Integrated Air and Missile Defense (IAMD).	8.2		X	X	X	X						X

Note 1 : The ability to suspend simulated and or exercise scenarios and drop all simulated and exercise data in the event of a real world threat is not unique to the Force Protection MCP. This is typically a systems requirement to provide system states and modes that will provide the capability to shift from a training state to an operational/tactical state purging all simulated, stimulated, and exercise data.

**Figure A-9-8. NECC SV-5: Force Protection**

## **SV-6 Data Exchange Matrix**

Attachment A-10 below displays the characteristics of the system data exchanged between systems in support of NECC. (Some information is not yet available, but will be provided in the CPD.)

The NECC SV-6 product associates information provided by NECC with the service(s) providing it. The capabilities described for each of the three primary Increment I MCPs (from Extension D) were decomposed into functions to provide top-level information services. These services are the basis for the SV-6. For each service, the information provided is specified via IER identifiers and descriptions from the OV-2 product. Details about the data, including systems and services expected to produce and consume it, is not yet known.

The process used to create Attachment A-10 represents a relatively high-level, top-down approach to understanding what services are needed for the purpose of sharing information. As the program matures, a complementary bottoms-up approach can be used to refine the SV-6, in which specific data elements from programs associated with NECC are identified, described in detail, and combined into services to satisfy capability needs.

## NECC SV-6: NECC Information Services

In a service-oriented architecture, point-to-point interfaces with static information exchange give way to information services available on the network to both known and previously unanticipated users. The NECC SV-6 product must therefore associate information to be provided by NECC with the service(s) that provide it. The NECC SV-6 is constructed based on the following analysis:

1. The capabilities described for the NECC Increment I MCPs (from Extension D) were decomposed into more detailed requirements.
2. The requirements were categorized and assembled into functions, and the functions were assigned to a small number of top-level information services.
3. For each service, the information to be provided is specified through the use of the information exchange (IE) identifiers and descriptions from the OV-2 product. Some information about the data, including the systems and services expected to produce and consume them, are provided. The columns in the SV-6 table are excerpted from the SV-6 template in the DoD Architecture Framework (v.1.0).

The process used to create the NECC SV-6 represents a relatively high-level, top-down approach to understanding what services are needed for the purposes of sharing information. As the program matures, a complementary bottoms-up approach can be used to refine the SV-6, in which specific data elements from programs associated with NECC are identified and described in detail.

Note that the SV-6 is intended to decompose the information needs depicted in the OV-2 and show specific data provided by specific services. Therefore data indirectly received from other MCPs are shown in the indirect IE # column. For example, IE# 67 (OPTES readiness data) is provided by the Readiness Information Service. The OV-2 shows that IE# 67 is needed by Force Projection and Situation Awareness MCPs. In the SV-6 table, IE# 67 appears under the indirect IE # column of those MCPs, implying that those other services will utilize the Readiness Information Service to obtain OPTES readiness data.

Also, only those information exchanges relevant to NECC Increment I are included in the SV-6 table below. Specifically, IE# 17-23, 38-42 (Intelligence), and 24-31, 49-52 (Force Employment) are not shown. They will be listed when those future MCPs are included. For cross function services, NECC will integrate with DoD-wide core enterprise services (such as collaboration, messaging, and discovery services provided by NCES). If NECC-specific cross function services are required, they will be added to the SV-6 table in the future.

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**Figure A-10. NECC SV-6 : Data Exchange Matrix**

SV-6 Line ID	Service Name	Mission Capability Package	Direct OV-2 IE #s	Indirect OV-2 IE#s	Data Provided by Service (from Figure A-2-3)	Data Producing Nodes	Data Consuming Nodes	Format	Accuracy	Units of Measure	Standards	Classification(s)
1.	Readiness Information <sup>1</sup>	Force Readiness	8, 14, 67	1-3, 10, 11, 43, 45, 65, 66 68	Readiness status of deploying forces, OPTES Readiness, registered and measured units data, force list, force movement data, force requirements/options, change to force status.	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text	N/A	N/A	SOAP, XML, XML namespace and schema, see standards in TV-1	Unclassified to TS
2.	Readiness Prediction	Force Readiness	16		Force Readiness Historical/Trends Analysis Report, Lessons Learned.	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text	TBD	TBD	SOAP, XML, XML namespace and schema, see standards in TV-1	Unclassified to TS
3.	Total Force Analysis	Force Readiness	15		Force Readiness Total Force Analysis and Single/Multiple TPFDD Analysis Report.	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components	ASCII text	TBD	TBD	SOAP, XML, XML namespace and schema, see standards in TV-1	Unclassified to TS
4.	Planning Support <sup>2</sup>	Force Projection	4, 6, 12, 13	3, 14-16, 43-48, 53-	Status/arrival of forces in theater; Alert/Planning Order, OPOD, JSCP, Contingency Planning Guidance, OPLAN,	NMCS, HLS/HLD, DOD and Non-	NMCS, HLS/HLD, DOD and Non-	ASCII text and	N/A	N/A	SOAP, XML, XML namespace and	Unclassified to TS

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SV-6 Line ID	Service Name	Mission Capability Package	Direct OV-2 IE #s	Indirect OV-2 IE#s	Data Provided by Service (from Figure A-2-3)	Data Producing Nodes	Data Consuming Nodes	Format	Accuracy	Units of Measure	Standards	Classification(s)
				61, 67	CONPLAN, Functional Plan, TPFDD; CONOPS; Commander's Intent, Joint Prioritized Effects List, Apportionment Guidance; FRAGO; Planning and execution orders; Orders and Alerts (changes, linkages, status of actions); Senior leadership decisions, guidance, and intent; Orders linkage information; Crisis management information; Checklist of crisis actions; Planning support briefings; registered and measured units data, change to force status, unit capability.	DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	binary file(s)			schema. See standards in TV-1.	
5.	Course of Action <sup>2</sup>	Force Projection	1,2, 5, 10, 11	3, 14-16, 43-48, 53-61, 67	Force movement requirements; Non-unit cargo resupply and personnel movement requirement estimates; Strategic movement requirements; Planned forces and logistics requirements; COA alternatives; Notional and actual force requirements/options; Potential combat, combat support, and combat service support units (active and reserve) for COA alternatives; Logistics requirements in selected functional areas; Joint Reporting Structure data; Force lists; Force and logistic selection data.	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text and binary file(s)	N/A	N/A	SOAP, XML, XML namespace and schema. See standards in TV-1.	Unclassified to TS
6.	Mobilization	Force Projection	8, 9, 66, 68		Acquisition and Cross-servicing Agreements; Civil Engineering Support Plan; Forces mobilization data; Combat, combat support, and combat service support units (active and reserve); Availability information: strategic guidance, deployment/redeployment, etc. data, location and apportionment data.	HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text	TBD	TBD	SOAP, XML, XML namespace and schema, see standards in TV-1	Unclassified to TS
7.	Deployment	Force Projection	2, 3		USTRANSCOM movement schedule/plans; Status/arrival of forces in	NMCS, DOD and Non-DOD	NMCS, HLS/HLD,	ASCII text	TBD	TBD	SOAP, XML, XML	Unclassified to TS

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SV-6 Line ID	Service Name	Mission Capability Package	Direct OV-2 IE #s	Indirect OV-2 IE#s	Data Provided by Service (from Figure A-2-3)	Data Producing Nodes	Data Consuming Nodes	Format	Accuracy	Units of Measure	Standards	Classification(s)
					theater (by Unit Identification Code (UIC), unit type, Unit Line Number (ULN)); Associated unit sustainment data; Sustainment estimates; Combat power and combat power ratio of forces data; Force module data.	Agencies, COCOM, JTF, Functional and Service Components, Multi-National Components	DOD and Non-DOD Agencies, COCOM, JTF, Functional and Service Components, Multi-National Components				namespace and schema, see standards in TV-1	
8.	TPFFD Development and Maintenance	Force Projection	2, 5, 7, 11		Force/channel traffic requirements; Source to final destination force/non-unit transportation requirements; Transportation total asset visibility data (location/operational status); Transportation feasibility data; In-transit status of personnel and cargo movement; Transportation shortfalls; Deployment routing, overflight routes, and landing rights; Air refueling routes, requirements, timing, and schedules; Airfield data; Deployment packages.	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text	TBD	TBD	SOAP, XML, XML namespace and schema, see standards in TV-1	Unclassified to TS
9.	Situational Awareness <sup>3</sup>	Situation Awareness	43, 44, 45, 46, 47, 48, 53-65	1-3, 5, 7	Position report; Friendly Order of Battle; Target data; Enemy Order of battle; Airspace control measures; Position reports; Intelligence summaries; ISR reports; Orders, plans; Overlays, battlefield geometry; Fire support coordination measures; Mobility and counter mobility; ATO, STO, sortie allocation; Sortie allocation; Target list; Fire support coordination measures; Threat warning; Mobility/Counter mobility; Orders; Position reports; Overlays, battlefield geometry; Synchronization/planning matrices; Resource status; Projected launch and impact point; Time of flight; JWARN message; WMD effects modeling; BLUE GMD/TMD force status and capabilities; IAMD IPB products; Terrorist alerts and other advisories; CBRNE information; Base	NMCS, HLS/HLD, DOD and Non-DOD Agencies, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text and binary file(s)	TBD	Degree for Geolocation	SOAP, XML, XML namespace and schema, HTML XHTML CSS DOM URL GIF JPEG PNG VRML WSRP JSR-168, GML, WMS/SLD, WFS/WCS, WGS 84, VPF/RPF, NITF/BHIF/CGM, MIL-STD-2525B (symbology), MPEG-2, ISMA, FIPS Pub 10-4 (countries),	Unclassified to TS

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SV-6 Line ID	Service Name	Mission Capability Package	Direct OV-2 IE #s	Indirect OV-2 IE#s	Data Provided by Service (from Figure A-2-3)	Data Producing Nodes	Data Consuming Nodes	Format	Accuracy	Units of Measure	Standards	Classification(s)
					and civil infrastructure details; Critical infrastructure details; Location/ capabilities of specialty response personnel.						BUFR/GRIB (meteorology), SEDRIS (environmental). see standards in TV-1	
10.	Decision Support <sup>2,3</sup>	Situation Awareness	45, 46	4, 6, 10, 11, 12-16, 66-68	Alert/Planning Order, OPORD, JSCP, Contingency Planning Guidance, OPLAN, CONPLAN, Functional Plan, TPFDD; CONOPS; Commander's Intent, Joint Prioritized Effects List, Apportionment Guidance; FRAGO; Planning and execution orders; Orders and Alerts (changes, linkages, status of actions); Senior leadership decisions, guidance, and intent; Notional and actual force requirements/options; Potential combat, combat support, and combat service support units (active and reserve) for COA alternatives; Logistics requirements in selected functional areas; Force list; Force and logistic selection data; Combat Service Support information; Force readiness; Unit capability; HHQ guidance; GBM/TBM /CBRNE event; Combat, combat support, and Combat Service Support units (active and reserve) information; OPTES Readiness, mission unique data; Availability information: strategic guidance deployment/redeployment data, location and apportionment data.	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text and binary file(s)	N/A	N/A	SOAP, XML, XML namespace and schema. See standards in TV-1.	Unclassified to TS
11.	Global COP <sup>2,3</sup>	Situation Awareness	43, 44, 45, 46, 47, 48, 53-65	8	Position reports; Changes to force status; Friendly order of battle; Track updates, reports, messages, JWARN; Situational awareness; target data; GMI; BLUE, RED, GRAY, NEUTRAL force location/ disposition; Joint Coordination Measures (e.g., overlays, control points, routes, RFA, FSCL, EA, CBRN); Situational awareness; Combat Service Support information;	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service	ASCII text and binary file(s)	TBD	Degree for Geolocation	HTML XHTML CSS DOM URL GIF JPEG PNG VRML WSRP JSR-168, GML, WMS/SLD, WFS/WCS, WGS 84, VPF/RPF,	Unclassified to TS

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SV-6 Line ID	Service Name	Mission Capability Package	Direct OV-2 IE #s	Indirect OV-2 IE#s	Data Provided by Service (from Figure A-2-3)	Data Producing Nodes	Data Consuming Nodes	Format	Accuracy	Units of Measure	Standards	Classification(s)
					Force readiness; Unit capability; Situational awareness; HHQ guidance: GBM/TBM /CBRNE event; Situational awareness; Targets: Enemy/neutral/ unknown multi-format track-feeds; Enemy Order of Battle, High-interest, and correlated SIGINT, ELINT, COMINT, IMINT, MASINT, HUMINT data; Geospatial intelligence data; Situational awareness; Moving target data; Unprocessed SIGINT, ELINT, COMINT, IMINT, MASINT, HUMINT data.	Components, Multi-National Components	Components, Multi-National Components				NITF/BIIF/CGM, MIL-STD-2525B (symbology), MPEG-2, ISMA, FIPS Pub 10-4 (countries), BUFR/GRIB (meteorology), SEDRIS (environmental), SOAP, XML, XML schema, see standards in TV-1	
12.	Collection Management	Intelligence	32-37		Validated collection requirements, CM information, collection request/status; Collection evaluation feedback;  Higher and subordinate headquarters priority intelligence requirements (PIR) and guidance; Requests for Information (RFI); target collection deck; Global Military Intelligence (GMI); Standard collateral collection messages, management publications, and directives; Standard intelligence requirements;  Platform/sensor TTP summaries and usage guidance information;  Collection plan; Friendly collection asset status, availability, utility, and requirement satisfaction data; Joint Integrated Prioritized Collection List (JIPCL);  Intelligence collection management information; ISR asset capability, status, and current/planned employment data; Underlying data pertaining to ISR assets and status;  ISR strategy, detailed all-source collection plan, scheduled/projected ISR collection	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	NMCS, HLS/HLD, DOD and Non-DOD Agencies, IC Components, COCOM, JTF, Functional and Service Components, Multi-National Components	ASCII text and binary file(s)	TBD	TBD	SOAP, XML, XML namespace and schema, see standards in TV-1	Unclassified to TS

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SV-6 Line ID	Service Name	Mission Capability Package	Direct OV-2 IE #s	Indirect OV-2 IE#s	Data Provided by Service (from Figure A-2-3)	Data Producing Nodes	Data Consuming Nodes	Format	Accuracy	Units of Measure	Standards	Classification(s)
					periods:							
	Note: Information exchanges not included in Increment 1 MCPs: 17-23, 38-42 (Intelligence), 24-31, 49-52 (Force Employment)											
	Footnotes: 1. February 2006 DRAFT SV-6 by DISA for "JC2.1 Readiness Information". 2. February 2006 NCES 3.1 "Collaboration" and 3.2 "Chat/Instant Messaging" SV-6 data. 3. February 2006 DRAFT SV-6 by DISA for "JC2.9 Situational Awareness"											

## **TV-1 Technical Standards Profile**

The TV-1 consists of the set of systems standards rules that govern systems implementation and operation of that architecture. The technical standards generally govern what hardware and software may be implemented and what system data formats may be used (i.e., the profile delineates which standards may be used to implement the systems, system hardware/software items, communications protocols, and system data formats).

Attachment A-11 below displays the technical standards profile for the standards rules associated with NECC.

**Sunset Description:** Numerous standards have been marked as “sunset”, indicating deletion from the DISR on a future date to be determined by a specific, predefined programmatic event. The DISR delineates mandatory standards and guidelines in Volume I. In addition, selected services and functions are identified with a sunset clause and, thus, will be removed. The continued use of sunset standards is discouraged.

All DOD systems employing those services and functions having sunset clauses must provide transition plans explaining how the systems will transition from those standards to the ones replacing them when they are removed from the DISR. These plans will be received as part of the milestone acquisition process associated with the respective program.

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**Figure A-11. NECC TV-1: Technical Standards Profile**

Standard Identifier	Standard Title	Service Area	Status
CISS ISM: XML	Common Information Sharing Standard for Information Security Marking: XML Implementation, Implementation Guide, Release 2.0.3, 15 February 2006	Document Interchange	Mandated
CMS/XML Digital Signature Profiles v1.1	DoD Digital Signature Implementation Profiles	Authentication	Mandated
CSS2:1998	Cascading Style Sheets, level 2 CSS2 Specification, W3C Recommendation 12 May 1998.	Web Services	Mandated
DDMS 1.3 (CISS RM 1.3)	Department of Defense Discovery Metadata Specification (DDMS) Version 1.3, 29 July 2005; aka Common Information Sharing Standard for Resource Metadata: Application Profile for Discovery, Version 1.3, 29 July 2005	Application-specific Data Interchange, Document Interchange	Mandated
DOM 1.0	Document Object Model (DOM) Level 1 Specification, Version 1.0, W3C Recommendation, 1 October 1998	Document Interchange	Mandated
FIPS Pub 10-4:2002	Countries, Dependencies, Areas of Special Sovereignty, and Their Principal Administrative Divisions, April 1995 as modified by Change Notice 1, 1 Dec 1998; Change Notice 2, 1 Mar 1999; Change Notice 3, 1 May 1999; Change Notice 4, 25 Feb 2000; Change Notice 5, 10 Aug 2000; Change Notice 6, 28 Jan 2001; and Change Notice 7, 10 Jan 2002.	GEOINT: Geospatial	Mandated
FM 92-X Ext. GRIB WMO No. 306	GRIB WMO No. 306 Manual on Codes, International Codes, Volume 1.2 (Annex II to WMO Technical Regulations) Parts B and C. 2001	Application-specific Data Interchange	Mandated
FM 94-X Ext. BUFR WMO No. 306	BUFR WMO No. 306 Manual on Codes, International Codes, Volume 1.2 (Annex II to WMO Technical Regulations) Parts B and C. 2001	Application-specific Data Interchange	Mandated
GIF v89a	Graphics Interchange Format (GIF), Version 89a, CompuServe Incorporated, 31 July 1990.	Raster/Image Data Interchange	Mandated
GML 2.1.1	OpenGIS Geography Markup Language Encoding Specification, 1 November 2002.	GEOINT: Geospatial	Mandated
HTML 4.01	HTML 4.01 Specification, W3C Recommendation, Revised, 24 December 1999.	Document Interchange	Mandated

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IETF RFC 1738	Uniform Resource Locators (URL), 20 December 1994.	Web Services, Network Technologies	Mandated
IETF RFC 2246	The Transport Layer Security (TLS) Protocol Version 1.0, January 1999.	Security Protocols	Mandated
IETF RFC 2460	Internet Protocol, Version 6 (IPv6) Specification, December 1998.	Network Technologies	Mandated
IETF RFC 2616	Hypertext Transfer Protocol - HTTP 1.1, June 1999.	Web Services, Network Technologies	Mandated
IETF RFC 3253	Versioning Extensions to WebDAV (Web Distributed Authoring and Versioning), March 2002.	Web Services	Mandated
IETF XMPP	eXtensible Messaging and Presence Protocol, December 2004.	Audio Data Interchange	Mandated
ISO 8601:2004	Data elements and interchange formats -- Information interchange -- Representation of dates and times	Document Interchange, Calendaring and Scheduling	Mandated
ISO/IEC 10646:2003	Universal Multiple-Octet Coded Character Set (UCS): 2003	Internationalization Services	Mandated
ISO/IEC 12087-5:1998	Information technology - Computer graphics and image processing - Image Processing and Interchange (IPI) Functional specification - Part 5: Basic Image Interchange Format (BIIF), 1 December 1998, with Technical Corrigendum 1:2001.	GEOINT: Still Imagery	Mandated
ISO/IEC 13818-1:2000	Information technology - Generic coding of moving pictures and associated audio information, Part 1: Systems, 2000 (also known as MPEG-2 Systems).	GEOINT: Motion Imagery	Mandated
ISO/IEC 13818-2:2000	Information technology - Generic coding of moving pictures and associated audio information, Part 2: Video, 2000 (also known as MPEG-2 Video).	GEOINT: Motion Imagery	Mandated
ISO/IEC 13818-3:1998	Information technology - Generic coding of moving pictures and associated audio information, Part 3: Audio, 1998 (also known as MPEG-2 Audio).	GEOINT: Motion Imagery , Audio Data Interchange	Mandated
ISO/IEC 14772-1	Computer Graphics and Image Processing - The Virtual Reality Modeling Language - Part 1: Functional specification and UTF-8 encoding, 1998.	Raster/Image Data Interchange	Mandated
ISO/IEC 15948	Portable Network Graphics (PNG): Functional Specification Final Committee Draft (FCD), 2000.	Raster/Image Data Interchange, Technical Data Interchange (graphics)	Mandated

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ISO/IEC 8632-1:1999	Computer Graphics - Metafile for the storage and transmission of picture description information - Part 1: Function specification, as profiled by MIL-STD-2301A, Computer Graphics Metafile (CGM) Implementation Standard for National Imagery Transmission Format Standard, 5 June 1998 with Notice 1, 1 March 2001.	GEOINT: Still Imagery , Technical Data Interchange (graphics)	Mandated
ISO/IEC 8632-3:1999	Computer Graphics - Metafile for the storage and transmission of picture description information - Part 3: Binary encoding, as profiled by MIL-STD-2301A, Computer Graphics Metafile (CGM) Implementation Standard for National Imagery Transmission Format Standard, 5 June 1998 with Notice 1, 1 March 2001.	GEOINT: Still Imagery , Technical Data Interchange (graphics)	Mandated
ISO/IEC 8859-1	8-Bit Single-Byte Coded Character Sets - Part 1: Latin Alphabet No. 1, 1998.	Internationalization Services	Mandated
JPEG	JPEG File Interchange Format, Version 1.02, 1 September 1992, C-Cube Microsystems.	Raster/Image Data Interchange	Mandated
JSR-168	Java Specification Request (JSR) JSR-168, Portlet Specification API, Final Release ballot, Version 1.0, 06 October 2003.	Web Services	Mandated
MIL-STD-188-199(1)	Vector Quantization Decompression for the National Imagery Transmission Format Standard, 27 June 1994 with Notice 1, 27 June 1996.	GEOINT: Still Imagery	Mandated
MIL-STD-2401	DoD World Geodetic System 84 (WGS84), 11 January 1994.	GEOINT: Geospatial	Mandated
MIL-STD-2407(1)	Interface Standard for Vector Product Format (VPF), 28 June 1996, with Notice of Change, Notice 1, 26 October 1999.	GEOINT: Geospatial	Mandated
MIL-STD-2411(2)	Raster Product Format, 6 October 1994; with Notice of Change, Notice 1, 17 January 1995, and Notice of Change, Notice 2, 16 August 2001.	GEOINT: Geospatial	Mandated
MIL-STD-2500C	National Imagery Transmission Format (Version 2.1) for the National Imagery Transmission Format Standard, 01 May 2006	GEOINT: Still Imagery	Mandated
MIL-STD-2525B(1)	Common Warfighting Symbology, 1 July 2005 with Notice of Change 1	User (Physical/Cognitive)	Mandated
MIL-STD-6016C(1)	Tactical Data Link (TDL) 16 Message Standard, 28 March 2005.	Military Messaging	Mandated
MIL-STD-6017	Variable Message Format (VMF)	Military Messaging	Mandated

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MIL-STD-6040(1):2006 Baseline	United States Message Text Format (USMTF), Implementation date 31 March 2006.	Military Messaging	Mandated
Namespaces in XML 1.1	Namespaces in XML 1.1, W3C Recommendation 04 February 2004	Web Services	Mandated
NCPDP Batch v1.1	NCPDP Batch Standard Batch Implementation Guide, Version 1 Release 1, January 2000	Medical Services, Electronic Data Interchange (EDI)	Mandated
NCPDP v5.1	NCPDP Telecommunications Standard, Implementation Guide, Version 5.1, September 1999.	Medical Services, Electronic Data Interchange (EDI)	Mandated
NITF Extensions 2.1	The Compendium of Controlled Extensions (CE) for the National Imagery Transmission Format (NITF), Version 2.1, 16 November 2000.	GEOINT: Still Imagery	Mandated
RDF Vocabulary Description Language 1.0: RDF Schema	Resource Description Framework (RDF) Vocabulary Description Language 1.0: RDF Schema W3C Recommendation 10 February 2004	Document Interchange	Mandated
RDF/XML Syntax Specification (Revised)	Resource Description Framework (RDF)/XML Syntax Specification (Revised), W3C Recommendation, 10 February 2004	Document Interchange	Mandated
SAML 1.1 OASIS	Assertions and Protocol for the OASIS Security Assertion Markup Language (SAML) V1.1, OASIS Standard, 2 September 2003.	Web Services	Mandated
SLD 1.0	OpenGIS? Styled Layer Descriptor (SLD) Implementation Specification, 19 August 2002.	GEOINT: Geospatial	Mandated
SOAP 1.1	Simple Object Access Protocol (SOAP) 1.1, W3C Note, 8 May 2000.	Document Interchange	Mandated
UDDI 3.0.2	OASIS Universal Description, Discovery, and Integration Version 3.0.2 UDDI Spec, Dated 2004-Oct-19	Web Services	Mandated
WMS 1.1.1	OpenGIS? Web Map Service (WMS) Implementation Specification, 2 August 2004.	GEOINT: Geospatial	Mandated
WSDL 1.1	Web Services Description Language (WSDL) 1.1, W3C Note, 15 March 2001.	Document Interchange	Mandated
WS-I Basic Profile 1.1	Web Services Interoperability Organization (WS-I) Basic Profile 1.1, Final Material, August 24, 2004.	Web Services	Mandated
WSRP OASIS	OASIS Web Services for Remote Portlets Specification, August 2003	Web Services	Mandated
WS-Security 1.0 OASIS	Web Services Security: SOAP Message Security 1.0 (WS-Security 2004), OASIS Standard, March 2004	Web Services	Mandated

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XACML 2.0 OASIS	eXtensible Access Control Markup Language (XACML) Version 2.0, OASIS Standard, 1 February 2005	Web Services	Mandated
XForms 1.0	XForms, W3C Working Draft, 12 November 2002.	Document Interchange	Mandated
XHTML 1.1: 31 May 2001	Extensible Hypertext Markup Language (XHTML) Version 1.1 - Module-based XHTML, W3C Recommendation, 31 May 2001.	Web Services, Document Interchange	Mandated
XMI	XML Metadata Interchange, Version 1.1, ad/99-10-22, 25 October 1999.	Modeling and Simulation	Mandated
XML 1.0 (Third Edition)	Extensible Markup Language (XML) 1.0 (Third Edition), W3C Recommendation, 04 February 2004	Web Services	Mandated
XML Schema Pt 1	XML Schema Part 1: Structures, W3C Recommendation, 2 May 2001	Electronic Data Interchange (EDI)	Mandated
XML Schema Pt 2	XML Schema Part 2: Datatypes, W3C Recommendation, 2 May 2001	Electronic Data Interchange (EDI)	Mandated
XML Signature	XML Signature Syntax and Processing, W3C Recommendation, 12 February 2002.	Electronic Data Interchange (EDI)	Mandated
XML-Encryption W3C	XML Encryption Syntax and Processing, W3C Recommendation, 10 December 2002.	Web Services	Mandated
XPATH 1.0	XML Path Language (XPath), Version 1.0, W3C Recommendations, 16 November 1999.	Document Interchange	Mandated
XSL 1.0:2001	Extensible Stylesheet Language (XSL), Version 1.0, W3C Recommendation, 15 October 2001.	Document Interchange	Mandated
XSLT 1.0	XSL Transformations: Version 1.0: W3C Recommendations, 16 November 1999.	Web Services	Mandated

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## TV-2 Technical Standards Forecast

TV-2 lists emerging or evolving technology standards relevant to the systems covered by the architecture.

Attachment A-12 below displays the technical standards forecast for the standards rules associated with NECC.

**Figure A-12. NECC TV-2: Technical Standards Forecast**

Standard Identifier	Standard Title	Service Area	Status
GML 3.1.1	OpenGIS Geography Markup Language Encoding Specification	GEOINT: Geospatial	Emerging
IBS TIDP	Integrated Broadcast Service (IBS) Technical Interface Design Plan - Test Edition (TIDP-TE)	Military Messaging	Emerging
IEEE 1484.1 d9	Education and Training Systems Architecture and Reference Model, Learning Technology Systems Architecture (LTSA), Draft 9, 30 November 2001.	Learning Technologies	Emerging
IEEE 1484.11.1	Data model for Content to LMS Communications, 15 March 2001.	Learning Technologies	Emerging
IEEE 1484.12.1	Draft Standard for Learning Object Metadata (LOM), 4 March 2002.	Learning Technologies	Emerging
ISMA 2.0:2003	Internet Streaming Media Alliance Standard, ISMA 2.0	Multimedia Processing	Emerging
ISO/IEC 18023	Computer Graphics and Image Processing - Synthetic Environment Data Representation and Interchange Specification (SEDRIS), 5 December 2001.	GEOINT: Geospatial	Emerging
ISO/IEC 18025	Computer Graphics and Image Processing - Environmental Data Coding Specification (EDCS), 26 December 2002.	GEOINT: Geospatial	Emerging
ISO/IEC 18026	Computer Graphics and Image Processing - Spatial Reference Model (SRM), 14 January 2002.	GEOINT: Geospatial	Emerging
OMG UML 2.0	Unified Modeling Language: Superstructure, version 2.0, OMG Final Adopted Specification, August 2003	Web Services, Architectures and Applications	Emerging
WCS 1.0	OpenGIS? Web Coverage Service (WCS) Implementation Specification	GEOINT: Geospatial	Emerging
WFS 1.1	OpenGIS? Web Feature Service (WFS) Implementation Specification	GEOINT: Geospatial	Emerging

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WS-Addressing	Web Services Addressing (WS-Addressing), 10 August 2004.	Web Services	Emerging
WS-Eventing	Web Services Eventing (WS-Eventing), August 2004	Web Services	Emerging
WS-Reliability 1.1	WS-Reliability 1.1, OASIS Standard, 15 November 2004	Web Services	Emerging
XMI-ax	XML Metadata Interchange, Version 1.1 - Appendices, ad/99-10-13, 25 October 1999.	Modeling and Simulation	Emerging
XPath 2.0	XML Path Language (XPath) 2.0, W3C Working Draft 29 October 2004	Web Services, Document Interchange	Emerging
XSLT 2.0:2005	XSL Transformations (XSLT) Version 2.0, W3C Working Draft 4 April 2005	Web Services	Emerging

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