JS J8 Deputy Director for C4

Joint Close Air Support (JCAS)
Tier I Joint Mission Thread

AV-1 Overview and Summary Information

August 2011

Version 1.0

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JS J8 Deputy Director for C4
Joint Close Air Support Joint Mission Thread
AV-1 Overview and Summary Information

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REVISION HISTORY TABLE

Rev	Description	Name	Date
0.01	Initial Release – Working Draft	Gloria Boardman	16 February 2010
0.02	Incorporated BDE input from J89 CAS SME	Gloria Boardman	24 February 2010
0.03	Switched from JCAS JCD OV-1 to JFIIT OV-1	Robert Page	10 March 2010
0.04	Incorporated JFIIT input from CRM	Dan Eaker	19 April 2010
0.05	Inserted updated OV-1; admin versioning updates.	Dan Eaker	28 June 2010
0.06	Updated Point of Contact, Updated Milestones and admin versioning updates	Sharon Slaughter	30 June 2010
0.07	Updated content to reflect most recent architecture product modifications	Adyre C. Mason	17 September 2010
0.08	Updated based on adjudicated comments	Adyre C. Mason	30 September 2010
0.09	Updated based on AO WG review	Adyre C. Mason	09 November 2010
0.10	Updated based on JFS ESC WG (06 Level) Review	Adyre C. Mason	11 March 2011
0.10.1	Removed unused Section 8 "DARS Input Fields"; moved Acronym List up to Section 8	Marsha D. Mullins	04 April 2011
0.11	Revised based on FOGO comments	Adyre C. Mason	19 May 2011
1.00	Final version established as a result of JSAP	Adyre C. Mason	08 August 2011

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1 Architecture Identification

1.1 Architecture Name

Joint Close Air Support (JCAS) Joint Mission Thread (JMT)

1.2 Architecture Version Number

Version 1.0

1.3 Architecture Description

The Joint Close Air Support (JCAS) Joint Mission Thread (JMT) is one of several JMTs that are currently being defined and developed. A JMT is defined as "an operational and technical description of the end-to-end set of activities and systems that accomplish the execution of a Joint mission," per the CJCSI 6212.01 series. The JMT concept spans the entire spectrum of military warfare operations but relates best to the Operational and Tactical Universal Joint Tasks (UJTs).

Data associated with JMTs align with Joint Publications, appropriate Tactics, Techniques, and Procedures (TTPs), and UJTs. Proposed JMT development methodology includes form, format, and required information to enable federated exchange and reuse of JMT data. Reusable data components include Joint capabilities, platforms, organizations, systems, applications, activities, common system functions, and requirements documents.

Higher level JMTs provide the Joint architectures needed to identify the organizations, processes, and information exchanges required to execute a Joint mission from end-to-end. They include the Joint Organizations, Joint Operational Activities, and associated linkages among those entities to accomplish the defined set of activities in order to meet the Commander's intent and objectives.

Lower level JMTs collectively describe their higher level counterparts. They include details regarding technical infrastructure, technical and control capabilities, standards, measures, and integrated architecture information. As a result, they enable objective, evidential recommendations for materiel and non-materiel modifications. Once defined and validated, these "tiered" JMTs allow unambiguous tracking of activities through the associated documentation language (e.g., Department of Defense Architecture Framework (DoDAF) products, to include: all views (AVs), operational views (OVs), system views (SVs), and executable architecture (EA)).

The baseline Tier I JMT Package consists of an AV-1, AV-2, OV-1, OV-2, OV-4, OV-5b, and SV-1 across the breadth of the thread. The Sponsor then begins the validation/approval process of these artifacts with appropriate Subject Matter Experts (SMEs). This will enable the team to federate the views for reuse and analysis by other

architects, either with the same JMT or across several JMTs. The Joint Mission Thread Architecture and Test Working Group (JMTAT WG) will assemble the multiple JMT perspectives in order to exploit their commonality.

Joint Publication JP 3-09.3, "Close Air Support" defines close air support as: "air action by fixed-wing and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces, and requires detailed integration of each air mission with the fire and movement of those forces." This is not to be confused with the Army's Close Combat Attack (CCA) which the Army describes as a hasty or deliberate attack by Army aircraft providing air-to-ground fires for friendly units engaged in close combat as part of the Army combined arms team. In CCA, due to capabilities of the aircraft and the enhanced situational awareness of the aircrews, terminal control from ground units or controllers is not necessary. CCA is not synonymous with close air support (CAS).

The Joint Fire Support Executive Steering Committee (JFS ESC) is a flag officer/general officer level, Joint Requirements Oversight Council (JROC) approved body established to analyze and resolve joint fire support issues. The JFS ESC provides a joint forum for the Services, Combatant Commands (COCOM), Office of the Secretary of Defense for Cost Assessment and Program Evaluation (OSD CAPE), Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD AT&L), Joint Staff, Services, Centers of Excellence, other governmental agencies, and partner nations. The JFS ESC assists the Services and COCOMs in providing enhanced, jointly integrated, interoperable and cost efficient JFS capabilities to the warfighter.

The Joint Staff Deputy Director for Command, Control, Communications, and Computers (JS DD C4) Architecture Integration Division (AID) will initiate, develop, and revise architecture products decomposing the high level tasks across the breadth of the CAS thread to include: Planning, Preparation, Execution, and Assessment.

1.4 Security Classification

Unclassified

1.5 Last Modified Date

08 August 2011

1.6 Granularity Level

Operational and tactical

1.7 Methodologies Used

Joint Mission Thread (JMT) Methodology; see "Concept of Operations (CONOPS) for Joint Mission Thread Development and Reuse" for more information.

1.8 Assumptions and Constraints

1.8.1 Assumptions

- The JMT Development Team has sufficient expertise, tools, and manpower to complete Tier I JMT Development.
    a. The JCAS JMT Development Team consists of representatives from the JS DD C4 Joint Deployable Analysis Team (JDAT), Joint Fires Division, and Architecture Integration Division (AID).
    b. The Joint Fires Division will provide the review of architecture data/products prior to submission to the JFS ESC for formal staffing.
    c. JDAT and AID will provide architecture development support to the JCAS JMT effort.
- All dates presented in Table 1: Plan of Action and Milestones are based upon the following assumptions:
    a. The JMT Development Team will obtain all necessary data to be architected for the required views in a timely manner. All dates will shift accordingly if the required data for a specific architecture view is not received by the finish date of the previously scheduled architecture view.
    b. Comments for the architectures sent out for review will be received in a timely manner.
- The Joint Fire Support Executive Steering Committee (JFS ESC) sponsors development of the JCAS JMT.
    a. The Sponsor is the primary operational customer for the team assigned to the JMT.
    b. The Sponsor provides feedback and direction to the JMT team at defined points in the process.
    c. The Sponsor also conducts the appropriate staffing functions to ensure Stakeholders buy into the products and results.
- The Joint Mission Thread Architecture and Test Working Group (JMTAT WG) members manage Tier I JMT Development.
    a. Management includes design and description of specific details of JMT CONOPS implementation.
    b. Management also includes adjudication of issues that will rise as JMT data is federated and re-deposited.

1.8.2 Constraints

- Section 7 outlines all DoDAF architecture products included in the JCAS Tier 1 JMT Integrated Architecture Development.
- DoDAF architecture requirements do not preclude development of other unique products, e.g., the Integrated View, when necessary.

- All dates presented in Table 1: Plan of Action and Milestones will shift accordingly if required data for a specific architecture view is not received by the finish date of the previously scheduled architecture view.

2 Tool and File Formats Used

2.1 Tools Used

The Architecture Driven Analysis (ADA) Branch Enterprise includes three key elements to develop and store Department of Defense Architecture Framework (DoDAF) products. These include a data repository, a tool for static/dynamic architectures, and an executable architecture tool.

The Joint Architecture Repository (JAR) serves as the central data repository for all JS DD C4 AID architecture products. Access to the JAR is provided by the Joint Architecture Federation Environment (JAFE) portal.

The Sparx Enterprise Architecture (EA) tool is used for static/dynamic architecture development. Sparx provides ease of data transferability between multiple architecture tools, executable process modeling tools, and a data repository which in turn enables the goal of providing reusable off the shelf architectures that can be shared.

IBM's WebSphere Business Modeler (WBM) tool is used for executable architecture development, as required. Executing in WBM exposes process workflow bottlenecks through its visual simulation engine platform.

2.2 File Formats Used

Generally, the products will be compatible with Microsoft Word, Excel, Visio, or JPEG file format. Other import/export formats are available, including XML, but examination of compatibility with specific tools must occur before utilizing other formats for data sharing.

3 Architecture Views/Products

3.1 Architecture Views

The architecture products supporting the JCAS mission at this stage will be those required by the baseline Tier I JMT Package. These products include: AV-1 Overview and Summary Information, AV-2 Integrated Dictionary, OV-1 High-level Operational Concept Graphic, OV-2 Operational Resource Flow Description, OV-4 Organizational Relationships Chart, OV-5b Operational Activity Model, and SV-1 System Interface Description.

3.2 Temporal Scope

As Is

3.3 Time Frame Start Date

25 January 2010

3.4 Time Frame End Date

31 December 2010

3.5 Organizations Involved

- Joint Staff Deputy Director for Command, Control, Communications, and Computers (JS DD C4), Architecture Integration Division (AID)
- Joint Staff Deputy Director for Command, Control, Communications, and Computers (JS DD C4), Joint Fires Division
- Joint Deployable Analysis Team (JDAT), Joint Staff Deputy Director for Command, Control, Communications, and Computers (JS DD C4)
- United States Joint Fire Support Executive Steering Committee (JFS ESC)
- Joint Mission Thread Architecture and Test Working Group (JMTAT WG)

3.6 Communities of Interest (COI)

TBD

3.7 Capability Areas Supported

Joint Close Air Support (JCAS)

3.8 Scope

The baseline Tier I JMT architecture package will focus on decomposing the high level tasks across the breadth of the CAS thread to include: Plan, Prepare, Execute, and Assess as they relate to the Phases of Operation from an operational/COCOM level and below.

4 Point of Contact

If changes are necessary to maintain the fidelity of this document and/or any other JCAS Tier I JMT products, please contact Ms. Marsha Mullins, JS J8 DD C4 AID, at marsha.mullins@hr.js.mil.

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4.4 Publisher Organization

Joint Staff Deputy Director for Command, Control, Communications, and Computers (JS J8 DD C4) Architecture Integration Division (AID), Architecture Driven Analysis (ADA) Branch

4.5 Approval Authority

The Joint Fire Support Executive Steering Committee (JFS ESC) sponsors development of the JCAS JMT. The Sponsor is the primary operational customer providing feedback and direction to the JMT team at defined points in the process. The Sponsor also conducts the appropriate staffing functions to ensure stakeholders support of the products and results.

The Joint Mission Thread Architecture and Test Working Group (JMTAT WG) members manage Tier I JMT Development. Management includes design and description of specific details of the JMT CONOPS implementation as well as adjudication of issues that will rise as JMT data is federated and re-deposited.

The Joint Architecture Council (JAC) will provide final architecture process verification and approve the external release of architecture products, artifacts, and related data through the Joint Architecture Federation Environment (JAFE).

5 Purpose and Viewpoint

5.1 Purpose

The purpose for developing a standardized JMT process is to significantly enhance analytical rigor in support of a more rapid delivery of mission-focused joint architecture support. This JMT describes the close air support (CAS) mission capability in a joint environment.

5.2 Viewpoint

The developed architecture is from the viewpoint of the Joint Force Commander (JFC).

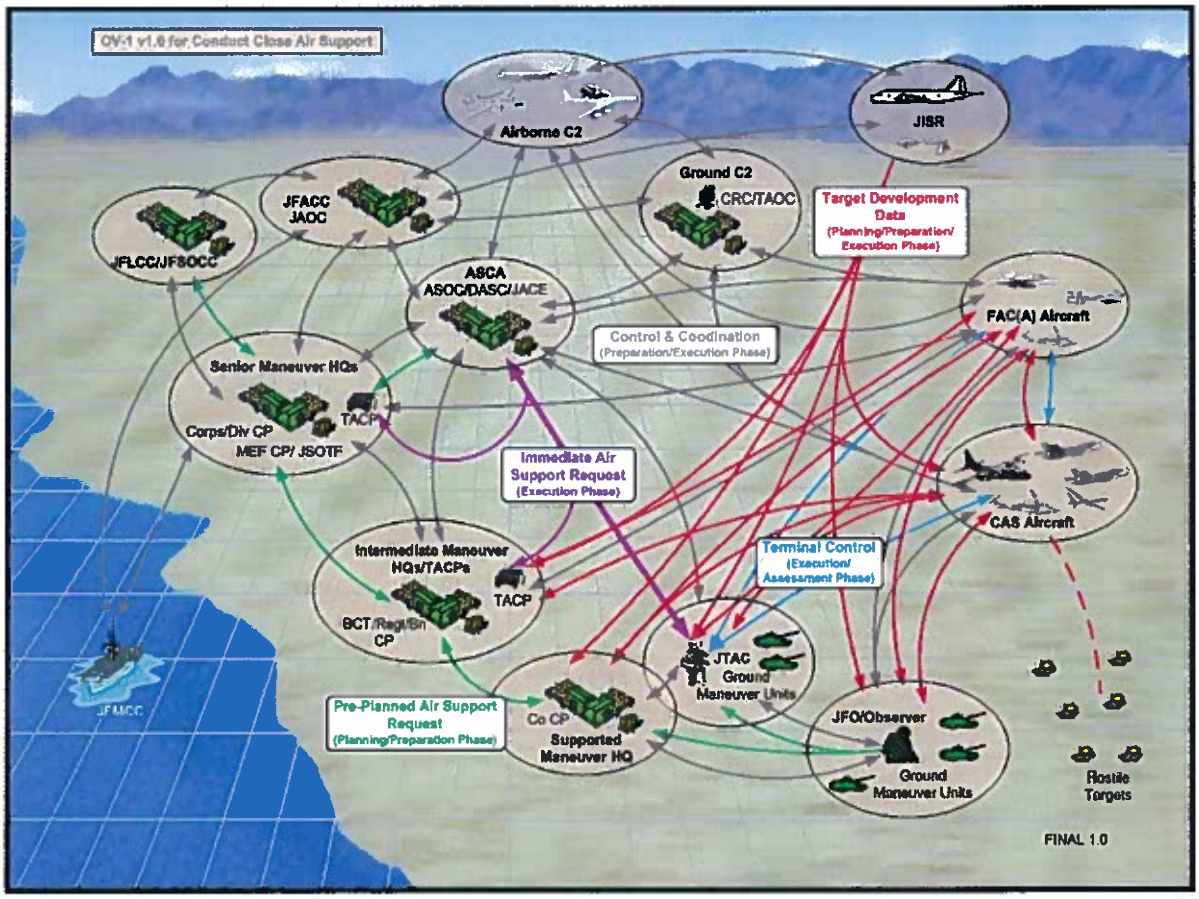

Figure 1: JCAS JMT OV-1

This OV-1 depicts a typical laydown of participants in the JCAS JMT, based on the CAS definition from JP 3-09.3, "…air action by fixed-wing and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces, and requires detailed integration of each air mission with the fire and movement of those forces." Task OP 3.2.1, Provide CAS Integration for Surface Forces, addresses the operational level of the CAS joint task. TA 3.2.2, Conduct CAS, addresses the tactical level.

3.2.1, Provide CAS Integration for Surface Forces, addresses the operational level of the CAS joint task. TA 3.2.2, Conduct CAS, addresses the tactical level.

Friendly forces at various echelons may submit Joint Tactical Air Strike Requests, or JTARs, classified as either preplanned or immediate. Preplanned CAS requests may be for sorties that the supported unit requires at a predetermined time and location or for sorties that the supported unit wants available during a particular block of time for use against anticipated targets during that time period. Immediate requests for CAS result from requirements identified by the ground unit outside of the air tasking order planning process. These requests can be met by on-call CAS missions or they may require the diversion or retasking of air assets. Key CAS nodes, depicted in the previous graphic, are described below:

- The Joint Terminal Attack Controller (JTAC) is a qualified (certified) Service member who, from a forward position, directs the action of combat aircraft engaged in close air support and other offensive air operations. JTACs include USAF terminal attack controllers, USMC Forward Air Controller (FAC)/JTACs, JTAC-qualified Special Operations Forces (SOF), and USN JTACS serving with riverine forces. JTACs control CAS strike aircraft and coordinate with Joint Fires Observers (JFOs), Fire Support Teams (FISTs), Observers, Forward Air Controllers (Airborne) (FAC(A)) aircraft, Tactical Air Control Parties (TACPs), and maneuver operation centers.
- A FAC is the USMC officer (aviator/pilot) member of the tactical air control party who, from a forward ground or airborne position, controls aircraft in close air support of ground troops.
- The FAC(A) is a specifically trained and qualified aviation officer who exercises control from the air of aircraft engaged in CAS of ground troops. The FAC(A) is normally an airborne extension of the TACP.
- The JFO is a trained and certified Service member who can request, adjust, and control surface-to-surface fires, provide targeting information in support of Type 2 and 3 close air support terminal attack control, and perform autonomous terminal guidance operations[1].
- Army Fires Cells, USMC Fire Support Coordination Centers (FSCCs), and Navy Supporting Arms Coordination Centers (SACCs) collaborate with USAF/USMC TACPs to provide fire support planning, coordination, fires deconfliction, integration, and synchronization of fires delivered on surface targets by surface fires, CAS, and other fire-support assets under the control, or in support, of the unit.
- The Air Support Operations Center (ASOC) and the Direct Air Support Center (DASC) are collocated with the Senior Maneuver Headquarters, each processes immediate requests for CAS, and coordinates the execution of CAS. The Joint

[1] Although not a certified JFO, the Army's Attack and Reconnaissance Aviators train using the JFO procedures as found in FM 3-09.32 Joint Application of Firepower (JFIRE).

Air Coordination Element (JACE) (SOF) is collocated with the Joint Special Operations Task Force (JSOTF), or subordinate SOF headquarters, and performs functions similar to the ASOC/DASC. USAF E3-A Airborne Warning and Control System (AWACS), Navy E2-C airborne early warning command and control, Joint Surveillance Target Attack Radar System (JSTARS), or other airborne platforms can act as an extension of the ASOC/DASC element or act in a nonstandard role to provide this function in the Area of Operations until a more permanent structure is in place.

- The USAF Control and Reporting Center (CRC) and the USMC Tactical Air Operations Center (TAOC) provide safe passage, radar control and surveillance for all aircraft within the operational area. The CRC/TAOC is extended by Airborne C2, including USAF E3-A and Navy E2-C.
- JISR includes operational elements such as JSTARS, Rivet Joint, and EP-3 as well as tactical assets, such as Unmanned Aircraft System, RC-12, and Non-Traditional ISR from FAC(A)/CAS aircraft. These entities provide target development data to maneuver force command elements, and to JFO/observers and JTACs to a limited extent.
- Component level commanders, that is, Joint Forces Land Component Commander (JFLCC), Joint Forces Special Operations Component Commander (JFSOCC), Joint Forces Air Component Commander (JFACC) and Joint Forces Maritime Component Commander (JFMCC), are displayed to provide the operational level of context. In particular, the Joint Air Operations Center (JAOC)/USMC Tactical Air Command Center (TACC) provides integration, coordination, and direction of Joint and Combined air operations. The JAOC also addresses CAS asset allocation and publishes the Air Tasking Order (ATO) with scheduled/on-call CAS missions to fill preplanned CAS requests and anticipated immediate CAS requirements. In addition, the Navy TACC controls all aircraft and air warning functions of naval tactical air operations.
- During Joint Force Operations, if a command relationship is established between elements of two components, the supporting component uses the CAS C2 system of the supported component. If a command relationship is not established between elements, each component forwards CAS requests utilizing its respective CAS process to the JAOC for consideration/fill.

6 Context

6.1 Mission Name

TA 3.2.2 Conduct Close Air Support and OP 3.2.1 Provide Close Air Support Integration for Surface Forces

6.2 Guidance References

Joint Mission Thread (JMT) Development and Reuse Concept of Operations (CONOPS)

6.2.1 Doctrine

The primary doctrine used in the development of the current JCAS Integrated Architecture includes:

- Joint Publication 3-09.3, Close Air Support (CAS)
- Digitally-Aided Close Air Support (DACAS) Coordinated Implementation (CI) Plan documents
- Joint Mission Thread (JMT) Tier I Development User's Guide (Draft)
- Publications recommended by the Joint Mission Thread Architecture and Test Working Group (JMTAT WG)
- Publications recommended by members of the JMT Development Team
- Publications recommended by the Joint Fire Support Executive Steering Committee (JFS ESC) who is the JCAS sponsor

6.2.2 Goals

The overall goal of the baseline JCAS Tier I JMT effort is to capture the processes involved in successfully conducting JCAS. Providing higher level JMT architectures enables the identification of those elements (organizations, processes, information exchanges, etc.) required to execute a joint mission from initiation to completion.

6.2.3 Vision

Proposed JMT development methodology includes form, format, and required information to enable federated exchange and reuse of JMT data. Through the development of architectures following the JMT methodology, reusable data components can be identified such as Joint capabilities, platforms, organizations, systems, applications, activities, common system functions, and requirements documents.

The baseline JMT Tier I Package consists of an AV-1, AV-2, OV-1, OV-2, OV-4, OV-5b, and SV-1 across the breadth of the thread. The Sponsor then begins the validation/approval process of these artifacts with appropriate Subject Matter Experts (SMEs). This will enable the team to federate the views for reuse and analysis by other

architects, either within the same JMT or across several JMTs. The Joint Mission Thread Architecture and Test Working Group (JMTAT WG) will assemble the multiple JMT perspectives in order to exploit their commonality.

6.3 Scenarios

The baseline Tier I JMT focus is on the Joint architectures needed to identify the organizations, processes, and information exchanges required to execute a Joint mission from end-to-end, so therefore does not have a scenario. The follow on Tier II strands, whose focus is driven by a scenario, represent Service/Agency instantiations of Tier I JMTs and are comprised of detailed breakdowns with supporting reusable data.

7 Tasking for Architecture Project and Linkages to Other Architectures

7.1 Tasking for Architecture Project

The Joint Staff Deputy Director for Command, Control, Communications, and Computers (JS J8 DD C4) Architecture Integration Division (AID) was asked to develop a JCAS JMT. The Joint Fires Division (JFD) reviewed and commented on architecture products prior to submission to the JFS ESC, and the Joint Deployable Analysis Team (JDAT) provided architecture development support to the JCAS JMT effort.

7.2 Plan of Action

The architecture products supporting the JCAS Integrated Architecture follow the JMT process guidance. The plan of action and milestones supports the development of all required products. Development of other views will be necessary to support the project to provide the level of detail required for both operational and systems analyses using the DOTMLPF construct.

7.3 Milestones

Table 1 below reflects the developmental products/views in support of the JCAS Integrated Architecture project with the associated plan of action and milestones and reflects the most recent date that a JCAS Tier I JMT architecture product has been updated. The OV-2, OV-4, OV-5b, and SV-1 are being developed in Sparx EA for data federation testing. Requirements may be added, deleted, or adjusted to ensure the products developed support the overall objectives and remain within the scoped parameters of the project.

View	Name	As Is	Initial Draft Completion Date
OV-1	High-Level Operational Concept Graphic	YES	30 June 2010
OV-2	Operational Resource Flow Description	YES	30 June 2010
OV-4	Organizational Relationships Chart	YES	30 June 2010
AV-1	Overview and Summary Information	YES	30 June 2010
OV-5b	Operational Activity Model	YES	30 June 2010
SV-1	Systems Interface Description	YES	30 June 2010
AV-2	Integrated Dictionary	YES	19 May 2011

Table 1: Plan of Action and Milestones

8 Appendix A – Acronym List

ASOC	Air Support Operations Center (USAF)
ATO	Air Tasking Order
AV	All View
AWACS	Airborne Warning and Control System
C2	Command and Control
CAS	Close Air Support
CI	Coordinated Implementation
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
COCOM	Combatant Command
COI	Communities of Interest
CONOPS	Concept of Operations
CRC	Control and Reporting Center (USAF)
DACAS	Digitally-Aided Close Air Support
DASC	Direct Air Support Center (USMC)
DoDAF	Department of Defense Architecture Framework
DOTMLPF	Doctrine, Organization, Training, Material, Leadership and Education, Personnel and Facilities
EA	Executable Architecture
FAC	Forward Air Controller
FAC (A)	Forward Air Controller (Airborne)
FIST	Fire Support Team
FSCC	Fire Support Coordination Center (USMC)
IAW	In Accordance With
JISR	Joint Intelligence, Surveillance, Reconnaissance
JAC	Joint Architecture Council
JACE	Joint Air Coordination Element (SOF)
JAOC	Joint Air Operations Center
JCAS	Joint Close Air Support
JDAT	Joint Deployable Analysis Team
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JFLCC	Joint Force Land Component Commander
JFMCC	Joint Force Maritime Component Commander
JFO	Joint Fires Observer
JFS ESC	Joint Fire Support Executive Steering Committee
JFSOCC	Joint Force Special Operations Component Commander
JMT	Joint Mission Thread
JMTAT WG	Joint Mission Thread Architecture and Test Working Group
JROC	Joint Requirements Oversight Council
JSTARS	Joint Surveillance Target Attack Radar System
JSOTF	Joint Special Operations Task Force

JS J8 DD C4	Joint Staff Deputy Director for Command, Control, Communications, and Computers
JTAC	Joint Terminal Attack Controller
JTAR	Joint Tactical Air Strike Request
OV	Operational View
SACC	Supporting Arms Coordination Center (Navy)
SME	Subject Matter Expert
SOF	Special Operations Forces
SV	System View
TACC	Tactical Air Control Center (Navy)
TACC	Tactical Air Command Center (USMC)
TACP	Tactical Air Control Party
TAOC	Tactical Air Operations Center (USMC)
TBD	To Be Determined
TTP	Tactics, Techniques, and Procedures
UJT	Universal Joint Task
USAF	United States Air Force
USMC	United States Marine Corps
WBM	WebSphere Business Modeler