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Communications and Information

***JOINT TECHNICAL ARCHITECTURE – AIR
FORCE***

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This Air Force instruction (AFI) implements Air Force Policy Directive (AFPD) 33-1, *Command, Control, Communications, and Computer (C4) Systems*. It mandates the Joint Technical Architecture – Air Force (JTA-AF) and describes implementation details, roles, and responsibilities. This instruction applies to all Air Force organizations and personnel involved in planning, designing, engineering, and managing the acquisition, installation and modification of Air Force information technology (IT) systems. In addition, it also applies to Air National Guard units when stationed on active duty bases and connected to the base infrastructure. This instruction supports the Department of Defense (DoD) 5000-series acquisition procurement publications. Address technical questions on this instruction to Headquarters Air Force Communications Agency (HQ AFCA/ITLD), 203 W. Losey Street, Room 1065, Scott AFB IL 62225-5222. Send recommended changes or comments to HQ AFCA/ITPP, 203 W. Losey Street, Room 1065, Scott AFB IL 62225-5222, using AF Form 847, **Recommendation for Change of Publication**, with an information copy to HQ AFCIC/ITAT. Refer to **Attachment 1** for a glossary of references and supporting information. Maintain and dispose of all records created as a result of prescribed processes in accordance with Air Force Manual (AFMAN) 37-139, *Records Disposition Schedule* (will convert to AFMAN 33-322V4).

1. Purpose . The JTA-AF is the IT technical architecture for the Air Force. It assists the Air Force in meeting the requirements of Title 40 U.S.C., Chapter 25, 1401 et seq., Public Law 104-208, 30 Sep 96, *Clinger-Cohen Act, 1996* (formally the *Information Technology Management Reform Act*) to achieve an interoperable IT infrastructure and reduces costs of ownership. While the DoD Joint Technical Architecture (DoD JTA) mandates a core set of standards, the JTA-AF tailors and refines them for Air Force use. The JTA-AF also provides additional standards, standards profiles, recommended products, IT infrastructure architectures, and guidance not included in the DoD JTA. The JTA-AF encompasses the DoD JTA and, as such, is the single Air Force source for IT standards and products guidance. The JTA-AF and associated implementation plan, compliance procedures, configuration control processes, compliance

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database, and tools are available on the JTA-AF Web page, <http://www.afca.scott.af.mil/jta-af/index.html>.

1.1. The JTA-AF Implementation Plan documents the Air Force approach to implementing the DoD JTA. The plan contains detailed implementation processes for the configuration management of JTA-AF, including Configuration Control Board (CCB) Charter/structure/management, Request For Change (RFC) submittal format/content/process, detailed process relationships between: JTA-AF, *Defense Information Infrastructure Common Operating Environment (DII COE)*, *JTA-AF Recommended Products*, and *DoD JTA*. The *JTA-AF Implementation Plan* will also contain the database requirements/maintenance to be provided by AFCA to support the status reports to be made available to the Air Force Chief Information Officer (AF-CIO), Air Force Acquisition Executive (AFAE), Office of the Secretary of Defense (OSD) and associated staffs, as required in the *Air Force Implementation Plan for the DoD Joint Technical Architecture (JTA)*, 1 December 1998.

2. Policy . The use of JTA-AF standards and standards profiles are mandated for all Air Force IT acquisitions. Air Force users must use JTA-AF recommended products and IT infrastructure architectures whenever feasible to foster interoperability, assure mission success, commonality, and reduce cost of ownership. Competitively awarded contracts will include a list of recommended JTA-AF products. The JTA-AF recommended products list is posted on the JTA-AF Web page.

2.1. Applicability. Air Force IT refers to all information processing and information transmission systems in the Air Force inventory. This includes command and control (C2) (composed of all mission areas including combat support), global networks, data processing facilities, communications systems, wireless systems, modeling and simulation tools, and common office automation systems (e.g., desktop computers, word-processing software, electronic mail [E-mail] software, etc.). The JTA-AF also specifies the interface standards of those systems with other key assets (e.g., weapon systems and sensors) to support critical warfighter interoperability. The JTA-AF does not apply to the internal design of airborne weapons systems areas (requirements) dealing with avionics/weapons/electronics (AWE) needed to maintain safety of flight, combat air maneuvers, ordinance delivery, or operational flight as their primary mission functions. The JTA-AF does apply to those airborne weapon systems that provide as their primary mission function: C2 or intelligence information, and external communications interfaces to other weapons systems and systems supporting the JTFs and CINCs. Exclusions other than as noted above must have a waiver (see paragraph 2.2.).

2.1.1. The JTA-AF compliance is mandatory for all new systems and for upgrades to existing systems. JTA-AF implementation is required for:

- 2.1.1.1. All DoD acquisition categories (ACAT).
- 2.1.1.2. Spiral development acquisitions.
- 2.1.1.3. *Advanced concept technology demonstrations (ACTD).
- 2.1.1.4. *Advanced technology demonstrations (ATD).
- 2.1.1.5. *Joint warrior interoperability demonstrations (JWID).
- 2.1.1.6. *Joint expeditionary force experiments (JEFX).
- 2.1.1.7. *Battle laboratory projects and similar programs.

* These programs must use the JTA-AF for guidance in developing interfaces. It is not the intention of the JTA-AF to stifle new and emerging technology--program advocates must comply with JTA-AF compliance requirements. If additional units are needed beyond the residual capability, the additional buys shall constitute an acquisition program.

2.2. Implementation. The essential components of implementation are compliance, compliance assessment, migration plan, and waiver. Compliance refers to a particular IT system. A compliant system is designed and built in accordance with all of the applicable standards and guidance in the JTA-AF. Compliance assessment is the process to determine if a system is compliant and/or what additional criteria you must meet to achieve compliance. A migration plan is a schedule of intermediate steps that, when completed, result in a JTA-AF compliant system, and a waiver is a one-time exemption for a JTA-AF mandated standard. A waiver, once granted, is valid until the next major system upgrade, block change and/or other engineering change proposal (ECP) that changes the production baseline. The *Air Force Implementation Plan for the DoD Joint Technical Architecture (JTA)*, 1 December 1998, available on the JTA-AF Web page (<http://www.afca.scott.af.mil/jta-af/index.html>), details how and when each of these components are accomplished.

2.3. Data Collection and Reporting. The mechanism for collecting and maintaining information on the implementation components is the JTA-AF Compliance Database Management System (CDBMS), accessible via the JTA-AF Web page (<http://www.afca.scott.af.mil/jta-af/index.html>). HQ USAF Report Control Symbol (RCS) HAF-SC (A) 0001 applies. The JTA-AF CDBMS is used for all compliance assessments and will facilitate the development of migration plans and waivers by providing templates with instructions for their completion and processing. The reporting capability of the system is a beneficial tool for managers/leaders interested in tracking the status of JTA-AF compliance in the Air Force and making planning decisions. Refer to the JTA-AF Implementation Guide for specific information on reporting requirements and instructions.

2.4. Configuration Control Board (CCB). The JTA-AF CCB, in support of the CIO, works to achieve Air Force consensus on JTA-AF related issues. The CCB is the governing body for considering and approving changes to the JTA-AF and the *Joint Technical Architecture - Air Force Configuration Control Board Organizational Charter*, 20 March 1998 (which governs the CCB). The RFC is the mechanism for submitting changes for consideration by the CCB. The RFC format and on-line submission instructions are provided on the JTA-AF Web page (<http://www.afca.scott.af.mil/jta-af/index.html>).

2.4.1. The CCB will represent the Air Force on issues relating to the DoD JTA and the ESC/DI on issues relating to *Defense Information Infrastructure Common Operating Environment (DII COE)*.

2.5. JTA-AF Implementation Roles and Responsibilities.

2.5.1. AF-CIO. Acts as approval authority for *JTA-AF Implementation Plan*.

2.5.2. CIO Management Board:

2.5.2.1. For 5000-series programs, reviews and recommends approval of waiver requests.

2.5.3. SAF/AQ:

2.5.3.1. Supports HQ AFCIC/IT in developing the *Air Force Implementation Plan for the DoD JTA*.

2.5.3.2. Supports AFCA in developing the *JTA-AF Implementation Plan*.

2.5.3.3. As AFAE, approves waivers for acquisition programs.

2.5.4. HQ USAF/SC:

2.5.4.1. Recommends approval of waiver request packages prior to submission to the CIO Management Board.

2.5.5. HQ AFCIC/IT:

2.5.5.1. Manages the JTA-AF.

2.5.5.2. Chairs the CCB.

2.5.5.3. Develops and maintains the *Air Force Implementation Plan for the DoD JTA*.

2.5.5.4. Reviews waiver request packages prior to submission to the HQ USAF/SC and CIO Management Board.

2.5.5.5. Sends copies of the approved waiver request package to HQ AFCA/IT for tracking.

2.5.5.6. Separates and forwards required waiver packages to Under Secretary of Defense (USD[AL&T]) and ASD (C3I).

2.5.6. Air Staff Functionals and Major Commands (MAJCOM):

2.5.6.1. Incorporate the requirement for JTA-AF compliance into mission area plans (MAP) and mission support plans (MSP) according to AFI 10-1401, *Modernization Planning Documentation*.

2.5.6.2. Include the requirement for JTA-AF compliance in mission need statements (MNS), operational requirements documents (ORD), and program objective memorandums (POM) according to AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*, and AFI 65-601V1, *Budget Guidance and Procedures*.

2.5.6.3. Include JTA-AF compliance requirement in mission area assessment (MAA) and mission need analysis (MNA) according to AFI 10-601.

2.5.6.4. Concur with migration plans, as appropriate.

2.5.6.5. Concur with waiver requests, as appropriate.

2.5.7. Program Executive Officer (PEO)/Designated Acquisition Commander (DAC):

2.5.7.1. Require Air Force-level project managers (AF PM) to report, during existing reviews for 5000-series programs, their efforts toward meeting JTA-AF requirements.

2.5.7.2. Process and concur with waiver request packages, as appropriate, for 5000-series programs prior to milestone decision authority (MDA) review.

2.5.8. AF PM:

2.5.8.1. Ensure JTA-AF compliance in programs/projects.

2.5.8.2. Complete a compliance assessment for programs/projects.

2.5.8.3. Develop a migration plan for remedying deficiencies or securing an appropriate waiver.

2.5.8.4. Enter implementation data (compliance assessment, waiver data, and migration plan data) into the CDBMS and update the data when there is a change such as system upgrade, new system, or JTA-AF revision. Review JTA-AF for revisions at least annually.

2.5.9. MAJCOM/Base-Level Project Manager/Base Level Program Manager:

2.5.9.1. Provide technical solutions using JTA-AF compliant products and/or JTA-AF recommended products.

2.5.9.2. Provide JTA-AF requirements to base contracting for inclusion in new contracting documents.

2.5.9.3. Assist AF PM in unit-level migration plan or waiver procedures.

2.5.10. MDA or Equivalent:

2.5.10.1. Certify compliance assessments during program reviews for 5000-series programs.

2.5.10.2. Approve migration plans during program reviews for 5000-series programs.

2.5.10.3. Review and recommend approval of waiver requests for 5000-series programs prior to submission to the CIO Management Board.

2.5.11. HQ AFCA:

2.5.11.1. Develops and maintains JTA-AF.

2.5.11.2. Provides training and tools to facilitate JTA-AF compliance

2.5.11.3. Serves as Secretariat of the CCB.

2.5.11.4. Develops and maintains the CCB Charter.

2.5.11.5. Supports HQ AFCIC/IT in developing the *Air Force Implementation Plan for the DoD JTA*.

2.5.11.6. Develops and maintains the Technical Architecture Smart Assistant (TSA).

2.5.11.7. Develops and maintains the JTA-AF CDBMS.

2.5.11.8. Develops and maintains the *JTA-AF Implementation Plan*.

JOHN L. WOODWARD, JR., Lt General, USAF
Director, Communications and Information

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

Title 40 U.S.C., Chapter 25, 1401 et seq., Public Law 104-208, 30 Sep 96, *Clinger-Cohen Act, 1996* (formally the *Information Technology Management Reform Act*)

OSD JTA Policy Memorandum, *Implementation of the DoD Joint Technical Architecture*, August 22, 1996

DoDD 4630.5, *Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems*, November 12, 1992

DoDI 4630.8, *Procedures for Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems*, November 18, 1992

DoD Joint Technical Architecture (DoD JTA)

C4ISR Architecture Framework Version 2.0, 18 December 1997

Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3500.04A, *Universal Joint Task List*, 13 September 1996

Air Force Implementation Plan for the DoD Joint Technical Architecture (JTA), 1 December 1998

AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*

AFI 10-1401, *Modernization Planning Documentation*

AFPD 33-1, *Command, Control, Communications, and Computer (C4) Systems*

AFMAN 37-139, *Records Disposition Schedule* (will convert to AFMAN 33-322V4)

AFI 65-601V1, *Budget Guidance and Procedures*

Defense Information Infrastructure Common Operating Environment (DII COE)

Joint Technical Architecture - Air Force (JTA-AF)

Joint Technical Architecture - Air Force Configuration Control Board (CCB) Organizational Charter, 20 March 1998

Abbreviations and Acronyms

ACAT—Acquisition Category

ACTD—Advanced Concept Technology Demonstration

AFAE—Air Force Acquisition Executive

AFCA—Air Force Communications Agency

AF-CIO—Air Force Chief Information Officer

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AF PM—Air Force Program Manager

AIS—Automated Information System

ASD—Assistant Secretary of Defense

ATD—Advanced Technology Demonstration

AWE—Avionics/Weapons/Electronics

C2—Command and Control

C4ISR—Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

CCB—Configuration Control Board

CDBMS—Compliance Database Management System

CIO—Chief Information Officer

DAC—Designated Acquisition Commander

DII COE—Defense Information Infrastructure Common Operating Environment

DoD—Department of Defense

DoD JTA—DoD Joint Technical Architecture

E-mail—Electronic Mail

IT—Information Technology

JEFX—Joint Expeditionary Force Experiment

JTA—Joint Technical Architecture

JTA-AF—Joint Technical Architecture – Air Force

JWID—Joint Warrior Interoperability Demonstration

MAA—Mission Area Assessment

MAJCOM—Major Command

MAP—Mission Area Plan

MDA—Milestone Decision Authority

MNA—Mission Need Analysis

MNS—Mission Need Statement

MSP—Mission Support Plan

ORD—Operational Requirements Document

OSD—Office of the Secretary of Defense

PEO—Program Executive Officer

PM—Program Manager

POM—Program Objective Memorandum

RCS—Report Control Symbol

RFC—Request for Change

SIGINT—Signal Intelligence

TSA—Technical Architecture Smart Assistant

USD—Under Secretary of Defense

Terms

Advanced Concept Technology Demonstrations (ACTD)—ACTDs are a means of demonstrating the use of emerging or mature technology to address critical military needs. They are not acquisition programs, although they are designed to provide a residual, usable capability upon completion.

Information Technology (IT)—1. With respect to an executive agency, means any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. It includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources. IT does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract. 2. Any planned modification to an operational capability which produces, uses, or exchanges information in any form electronically; which crosses a functional boundary or boundaries among Component, Allied, or Combined Forces; and which produces an operational capability for the warfighter or other DoD decision maker. This technology includes: automated information systems (AIS), communications/computers interface to and among weapon systems communications/computer interfaces and among tactical signal intelligence (SIGINT) systems, and the DoD communications and information technology infrastructure.

Information Technology Architecture—An integrated framework for evolving or maintaining existing information technology and acquiring new information technology to achieve the agency's strategic goals and information resources management goals. **NOTE:** The *Clinger-Cohen Act* defines "Information Technology Architecture" with respect to Executive Branch agencies.

Joint Warrior Interoperability Demonstration (JWID) and Similar Pro—grams JWIDs are Joint Staff-sponsored demonstrations of evolving command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) technologies and joint/combined interoperability solutions. The capabilities and C4ISR processes are presented to the CINCs, military services, and agencies in a joint operational environment that allows the warfighters of all services to assess their value in solving current warfighting and interoperability deficiencies, and recommend them for implementation or further refinement.

Technical Architecture View—The minimal set of rules governing the arrangement, interaction, and interdependence of system parts or elements, whose purpose is to ensure that a conformant system satisfies a specified set of requirements. (*C4ISR Architecture Framework Version 2.0*, 18 December 1997)

Key World Wide Web Information Sources

ASD C3I: http://www.c3i.osd.mil/org/cio/i3/AWG_Digital_Library/pdfdocs/fw.pdf

SAF AQ: <http://www.safaq.hq.af.mil/>

CJCSM 3500.04A, Universal Joint Task List, 13 September 1996:

<http://www.dtic.mil/doctrine/jel/cjcsd/cjcsm.htm>

DoD JTA: <http://www-jta.itsi.disa.mil>

DoDD 4630.5, Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems: <http://jitc-emh.army.mil/ciidocs.htm#4630.5>

DODI 4630.8, Procedures for Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems, November 18, 1992:

<http://jitc-emh.army.mil/ciidocs.htm#4630.8>

OSD JTA Policy Memorandum, Implementation of the DoD Joint Technical Architecture, August 22, 1996: <http://www-jta.itsi.disa.mil/jta/jtamemo.html>

JTA-AF Web page: <http://www.afca.scott.af.mil/jta-af/index.html>

Air Force Implementation Plan for the DoD JTA: <http://www.afca.scott.af.mil/jta-af>

AF-CIO Management Board Web Page: <http://www.cio.hq.af.mil/ciomb.htm>